CAMBRIDGE SYSTEMATICS

Smart Transportation and Land Use Planning

HWY - 308603 - RP

technical

proposal

submitted to

Montana Department of Transportation

submitted by

Cambridge Systematics, Inc.

with

Renaissance Planning Group, Inc.

Robert Peccia & Associates, Inc.

April 4, 2008

www.camsys.com

CAMBRIDGE
SYSTEMATICS
Transportation leadership you can trust.

April 4, 2008

Ms. Richele Parkhurst
Purchasing Services Bureau
Montana Department of Transportation
2701 Prospect Avenue
P.O. Box 201001
Helena, Montana 59620-1001

Re: Smart Transportation and Land Use Planning, HWY – 308603-RP

Dear Ms. Parkhurst:

Cambridge Systematics, Inc. is pleased to submit this response to the Montana Department of Transportation (MDT) for the Smart Transportation and Land Use Planning. Enclosed are two originals and seven copies of our proposal for your review.

The development of effective tools to assist Montana communities with transportation and land use planning has the potential to enhance communication between MDT and its local transportation partners regarding the nexus between local land use decisions and transportation infrastructure needs. MDT faces a challenge in being expected to mitigate the effects of land development decisions that remain with the purview of local jurisdictions. This expectation leaves MDT in the position of providing highway capacity for purely local traffic movements at the expense of funding interregional and interstate projects that can drive statewide economic growth. In an era of greatly limited resources, a development-by-development approval process leads to the obvious result of funneling local traffic to the state highway system and inadequate funding for a complementary local network. When local jurisdictions expect state highways to serve a dual role as the primary local circulation system, even aggressive access management practices can go only so far in protecting state highway capacity for through movements.

MDT is in no way unique in its experience with local development approval. Even in states such as California and Florida with strict environmental review and concurrency requirements, the state transportation agency finds itself in a nearly constant struggle to protect the role of the state highway system. States that have been successful in building a collaborative process for integrated transportation and land use decision-making have not followed any unique model – other than patience and perseverance. Given this, the national "best practices" review is quite appropriate and will be quite informative, but will only result in a successful outcome if the tools, practices and policies are scaled for application in Montana

Cambridge Systematics, Inc. has assembled an exceptional team to complete this project. Cambridge Systematics has a long history in supporting Montana and other largely rural, developing states in addressing their transportation needs. We are a leading transportation

555 12th Street, Suite 1600
Oakland, CA 94607
tel 510 873 8700 www.camsys.com fax 510 873 8701

research organization for the National Cooperative Highway Research Program and transportation agencies in many western states, and have a particular interest and aptitude in distilling national best-practices for application in individual states.

For this project, Cambridge Systematics is pleased to team Robert Peccia and Associates (RPA) and Renaissance Planning Group (RPG). RPA, based in Helena, is a leading transportation planning and engineering firm with MDT and local agencies throughout Montana. RPG, which will provide support form its Charlottesville, Virginia office, has completed key research projects on transportation and land use integration in rural communities, and has particular expertise in developing innovating toolkits to convey meaningful information to disparate stakeholders.

We look forward to the opportunity to continue building our relationship working with MDT. If you have any questions about our proposal, or require any additional information about Cambridge Systematics, please do not hesitate to contact me at (510) 873-8700, or our proposed Project Manager, Tracy Clymer, at (404) 443-3200.

This proposal will remain valid for 120 days from the date of submission.

Sincerely,

CAMBRIDGE SYSTEMATICS, INC.

Steven M. Pickrell, P.E.
Senior Vice President

SMP/4231.000

Enclosures

STATE OF MONTANA
REQUEST FOR PROPOSAL
(THIS IS NOT AN ORDER)

RFP Number:	RFP Title:
HWY- 308603-RP	Smart Transportation and Land Use Planning

RFP Due Date and Time:	
April 4, 2008 3:00 pm, Local Time	Number of Pages: 41 Number of Attachments: 0

ISSUING AGENCY INFORMATION

Procurement Officer:	Issue Date:
Richele Parkhurst	February 26, 2008

Purchasing Services Bureau Montana Department of Transportation P.O. Box 201001 Helena, MT 59620-1001	Phone: (406) 444-7226 Fax: (406) 444-7613 TTY Users: 1-800-335-7592 or (406) 444-7696 Website: http://vendor.mt.gov/

INSTRUCTIONS TO OFFERORS

Return Sealed Proposal to:	Mark Face of Envelope/Package:
Purchasing Services Bureau Montana Department of Transportation 2701 Prospect Avenue P.O. Box 201001 Helena, MT 59620-1001	RFP Number: HWY-308603-RP RFP Response Due Date: 4/04/08
	MDT attempts to provide accommodations for any known disability that may interfere with a person participating in any service, program or activity of the Department. Alternative accessible formats of this information will be provided upon request. For further information call Richele Parkhurst at (406) 657-0274 Voice or 1-800-335-7592 TTY or TTY (406) 444-7696.

IMPORTANT: SEE STANDARD TERMS AND CONDITIONS

OFFERORS MUST COMPLETE THE FOLLOWING

Offeror Name/Address:	Authorized Offeror Signatory:
Cambridge Systematics, Inc. 555 12th Street, Suite 1600 Oakland, CA 94607	Steven M. Pickrell (Please print name and sign in ink)
Offeror Phone Number: (510) 873-8700	**Offeror FAX Number:** (510) 873-8701
Offeror Federal I.D. Number: 04-2505095	**Offeror E-mail Address:** spickrell@camsys.com

OFFERORS MUST RETURN THIS COVER SHEET WITH RFP RESPONSE

I, Cambridge Systematics, Inc. have received the following addendum:
(Company Name)

Addendum #1 _____
(Signature)

A copy of this signed addendum **MUST** be included with your bid response. Failure to include a copy of this addendum with your response will result in disqualification of your response.

MDT attempts to provide accommodations for any known disability that may interfere with a person participating in any service, program or activity of the Department. Alternative accessible formats of this information will be provided upon request. For further information call Richele Parkhurst at (406) 657-0274 Voice or 1-800-335-7592 TTY or TTY (406) 444-7696.

technical proposal

Smart Transportation and Land Use Planning

submitted to

Montana Department of Transportation

submitted by

Cambridge Systematics, Inc.
555 12th Street, Suite 1600
Oakland, California 94607

April 4, 2008

Section 1. Project Overview and Instructions

1.0 Project Overview

Cambridge Systematics, Inc., understands and will comply.

1.1 Contract Term

Cambridge Systematics, Inc., understands and will comply.

1.2 Single Point of Contact

Cambridge Systematics, Inc., understands and will comply.

1.3 Definition of Terms

Cambridge Systematics, Inc., understands and will comply.

1.4 Required Review

Cambridge Systematics, Inc., understands and will comply.

1.4.1 Review RFP

Cambridge Systematics, Inc., understands and will comply.

1.4.2 Form of Questions

Cambridge Systematics, Inc., understands and will comply.

1.4.3 State's Answers

Cambridge Systematics, Inc., understands and will comply.

1.5 General Requirements

Cambridge Systematics, Inc., understands and will comply.

1.5.1 Acceptance of Standard Terms and Conditions/Contract

Cambridge Systematics, Inc., understands and will comply.

1.5.2 Resulting Contract

Cambridge Systematics, Inc., understands and will comply.

1.5.3 Understanding of Specifications and Requirements

Cambridge Systematics, Inc., understands and will comply.

1.5.4 Prime Contractor/Subcontractors

Cambridge Systematics, Inc., understands and will comply.

1.5.5 Offeror's Signature

Cambridge Systematics, Inc., understands and will comply.

1.5.6 Offer in Effect for 120 Days

Cambridge Systematics, Inc., understands and will comply.

1.6 Submitting a Proposal

Cambridge Systematics, Inc., understands and will comply.

1.6.1 Organization of the Proposal

Appendix D of the Research, Development, and Technology Transfer of MDT provides instructions on how to prepare a proposal. The requirements outlined in Appendix D have been addressed in the following sections:

Appendix D Proposal Section	MDT Smart Transportation and Land Use Planning Proposal Section Addressing Appendix D Requirements
Title Page	Title Page
Table of Contents	Table of Contents
Problem Statement	Section 4.1.3 – Method of Providing Services
Background Summary	Section 4.1.3 – Method of Providing Services
Objectives	Section 4.1.3 – Method of Providing Services
Benefits	Section 4.1.3 – Method of Providing Services
Research Plan	Section 4.1.3 – Method of Providing Services
Products	Section 4.1.3 – Method of Providing Services
Implementation	Section 4.1.3 – Method of Providing Services
Time Schedule	Section 4.1.3 – Method of Providing Services
Staffing	Section 4.1.2 – Resumes/Company Profile and Experience, Section 4.1.3 – Method of Providing Services, and Appendix C – Resumes
Facilities	Section 4.1.3 – Method of Providing Services
MDT Involvement	Section 4.1.3 – Method of Providing Services
Budget	Cost Proposal (submitted in sealed envelope)

1.6.2 Failure to Comply with Instructions

Cambridge Systematics, Inc., understands and will comply.

1.6.3 Multiple Proposals

Cambridge Systematics, Inc., understands and will comply.

1.6.4 Copies Required and Deadline for Receipt of Proposals

Cambridge Systematics, Inc., understands and will comply.

1.6.5 Late Proposals

Cambridge Systematics, Inc., understands and will comply.

1.6.6 Addressing of Proposals

Cambridge Systematics, Inc., understands and will comply.

1.7 Cost of Preparing a Proposal

Cambridge Systematics, Inc., understands and will comply.

1.7.1 State Not Responsible for Preparation Costs

Cambridge Systematics, Inc., understands and will comply.

1.7.2 All Timely Submitted Materials Become State Property

Cambridge Systematics, Inc., understands and will comply.

Section 2. RFP Standard Information

2.0 Authority

Cambridge Systematics, Inc. understands and will comply.

2.1 Offeror Competition

Cambridge Systematics, Inc. understands and will comply.

2.2 Receipt of Proposals and Public Inspection

Cambridge Systematics, Inc. understands and will comply.

2.2.1 Public Information

Cambridge Systematics, Inc. understands and will comply.

2.2.2 Procurement Officer Review of Proposals

Cambridge Systematics, Inc. understands and will comply.

2.3 Classification and Evaluation of Proposals

Cambridge Systematics, Inc. understands and will comply.

2.3.1 Initial Classification of Proposals as Responsive or Nonresponsive

Cambridge Systematics, Inc. understands and will comply.

2.3.2 Determination of Responsibility

Cambridge Systematics, Inc. understands and will comply.

2.3.3 Evaluation of Proposals

Cambridge Systematics, Inc. understands and will comply.

2.3.4 Completeness of Proposals

Cambridge Systematics, Inc. understands and will comply.

2.3.5 Opportunity for Discussion and/or Oral Presentation

Cambridge Systematics, Inc. understands and will comply.

2.3.6 Best and Final Offer

Cambridge Systematics, Inc. understands and will comply.

2.3.7 Evaluator/Evaluation Committee Recommendation for Contract Award

Cambridge Systematics, Inc. understands and will comply.

2.3.8 Request for Documents Notice

Cambridge Systematics, Inc. understands and will comply.

2.3.9 Contract Execution

Cambridge Systematics, Inc. understands and will comply.

2.4 State's Rights Reserved

Cambridge Systematics, Inc. understands and will comply.

Section 3. Scope of Project

Cambridge Systematics, Inc., understands and will comply with all provisions of Section 3. Our specific approach for addressing the project scope is detailed in Section 4.1.3 of this proposal, as required in the RFP.

■ 3.0 Summary and Background

Cambridge Systematics, Inc., understands and will comply.

■ 3.1 Purpose and Objectives

Cambridge Systematics, Inc., understands and will comply.

3.1.1 Cambridge Systematics, Inc., understands and will comply.

3.1.2 Cambridge Systematics, Inc., understands and will comply.

3.1.3 Cambridge Systematics, Inc., understands and will comply.

3.1.4 Cambridge Systematics, Inc., understands and will comply.

■ 3.2 Tasks

Cambridge Systematics, Inc., understands and will comply.

3.2.1 Scan, Outreach, and Literature Review

Cambridge Systematics, Inc., understands and will comply.

3.2.1.1 Cambridge Systematics, Inc., understands and will comply.

3.2.1.2 Cambridge Systematics, Inc., understands and will comply.

3.2.1.3 Cambridge Systematics, Inc., understands and will comply.

3.2.1.4 Cambridge Systematics, Inc., understands and will comply.

3.2.2 Compilation and Analysis

Cambridge Systematics, Inc., understands and will comply.

3.2.2.1 Cambridge Systematics, Inc., understands and will comply.

3.2.2.2 Cambridge Systematics, Inc., understands and will comply.

3.2.3 Gap Analysis

Cambridge Systematics, Inc., understands and will comply.

3.2.3.1 Cambridge Systematics, Inc., understands and will comply.

3.2.3.2 Cambridge Systematics, Inc., understands and will comply.

3.2.3.3 Cambridge Systematics, Inc., understands and will comply.

3.2.4 Involving Stakeholders and Refining the Tools and Format

Cambridge Systematics, Inc., understands and will comply.

3.2.4.1 Cambridge Systematics, Inc., understands and will comply.

3.2.4.2 Cambridge Systematics, Inc., understands and will comply.

3.2.4.3 Cambridge Systematics, Inc., understands and will comply.

3.2.5 Completing and Deploying the Toolkit.

Cambridge Systematics, Inc., understands and will comply.

■ 3.3 Meeting and Deliverables

Cambridge Systematics, Inc., understands and will comply.

3.3.1 Kickoff Meeting

Cambridge Systematics, Inc., understands and will comply.

3.3.2 Interim Meetings

Cambridge Systematics, Inc., understands and will comply.

3.3.3 Final Meeting

Cambridge Systematics, Inc., understands and will comply.

3.3.4 Progress Report

Cambridge Systematics, Inc., understands and will comply.

3.3.5 Interim Reports

Cambridge Systematics, Inc., understands and will comply.

3.3.6 Final Report

Cambridge Systematics, Inc., understands and will comply.

3.3.7 Project Summary Report

Cambridge Systematics, Inc., understands and will comply.

3.3.8 Product Delivery

Cambridge Systematics, Inc., understands and will comply.

3.3.9 Reporting Guideline

Cambridge Systematics, Inc., understands and will comply.

Section 4. Offeror Qualifications

■ 4.0 State's Right to Investigate and Reject

Cambridge Systematics, Inc., understands and will comply.

■ 4.1 Offeror Qualifications/Informational Requirements

4.1.1 References

NCHRP 8-36A (Task 32) – Tools, Techniques, Methods, and Case Studies for Rural Transportation Planning – For the National Cooperative Highway Research Program (NCHRP), Cambridge Systematics identified and documented the "best practices" of tools, techniques, and methods used to support rural transportation planning, project prioritization, and project delivery undertaken by state departments of transportation (DOTs) and nonmetropolitan regional agencies. The research included: identifying rural transportation planning issues and the tools and methods used by state and regions; understanding the decision-making process used by states and regions to design, approve, implement, and deploy tools or methods; preparing case studies of the best practices; and recommending the future development and deployment of rural-oriented analysis tools. The result of this research is a toolbox of available and recommended tools, techniques, and methods designed to better support rural transportation planning, project prioritization, and project delivery.

Reference: Mr. Ronald McCready
AASHTO (formerly with NCHRP)
444 North Capitol Street, N.W., Suite 249
Washington, DC 20418
Telephone: (202) 624-5807
E-mail: rmccready@aashto.org
Contract Dates: 12/1/02 to 1/31/04

FHWA On-Call Planning, A Toolkit for Integrating Land Use and Transportation Decision-Making – For the Federal Highway Administration (FHWA), Cambridge Systematics provided a set of tools consisting of the methods, strategies, and procedures on the integration of land use and transportation planning, decision-making, and project implementation. The toolkit was developed through identifying and examining real-life examples of cooperative and integrated efforts on the part of land use and transportation

interests to address issues of growth and development in their neighborhoods, communities, regions, and states. The emphasis of the resulting web site (http://www.fhwa.dot.gov/planning/landuse/index.htm) was to present the information from these examples in a very user-friendly fashion, providing viewers with highlights, summaries, and key elements of successful collaborative partnerships. The web site also acts as a clearinghouse to more detailed and extensive information such as articles, reports, training opportunities, and other web sites representing the best practices. In a follow-up project for the FHWA, Cambridge Systematics updated and refreshed the examples and case studies. Six to eight additional tools were added to the toolkit.

Reference: Ms. Robin Smith
Office of Planning
Federal Highway Administration
12300 West Dakota, Suite 175
Lakewood, CO 80228
Telephone: (720) 963-3072
E-mail: Robin.Smith@fhwa.dot.gov
Contract Dates: 9/8/03 to 8/31/04 and 9/9/05 to 3/8/06

Montana DOT Transportation Planning Assistance, SAFETEA-LU Amendment – For MDT, Cambridge Systematics amended the latest Montana State Long-Range Transportation Plan (TRANPLAN 21) to be compliant with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) planning requirements. Cambridge Systematics conducted a detailed review and analysis of the SAFETEA-LU planning provisions and TRANPLAN 21 elements to identify those requiring amendment, public and stakeholder outreach, and additional analysis. Elements considered included the consistency of transportation plans with planned growth and economic development; new consultations (land use, tribal, environmental); environmental mitigation; capital, operations, and management and investment strategies; transportation system security; visualization techniques; strategic highway safety planning; and consistency with metropolitan planning organization (MPO) plans. Cambridge Systematics also conducted limited stakeholder outreach and used the information from the reviews and stakeholders to update specific statewide policy papers and economic forecasts in support of an amended TRANPLAN 21.

Reference: Ms. Sandra Straehl
Montana Department of Transportation
2701 Prospect Avenue
P.O. Box 201001
Helena, MT 59620-1001
Telephone: (406) 444-7692
E-mail: sstraehl@mt.gov
Contract Dates: 2/2007 to 7/2007

New Mexico DOT On-Call Planning, Sustainable Funding Strategies – For the New Mexico DOT, Cambridge Systematics assisted in the investigation of sustainable funding strategies for the state and local transportation systems and facilitated meetings of a

legislatively mandated Technical Committee that included state legislators, other elected officials, DOT leadership, and key interest groups. Cambridge Systematics prepared background material describing major sources of existing transportation funding in New Mexico, recent funding trends, and comparison to peer agencies around the country to help the Technical Committee formulate policies and objectives for alternative transportation funding portfolios. The ultimate goal was to help New Mexico's elected officials and transportation leaders understand the policy implications of various alternative and emerging funding sources for augmenting or restructuring the approach to transportation finance.

Reference: Ms. Pat Oliver-Wright
New Mexico Department of Transportation
Joe M. Anaya Building
Santa Fe, NM 87504-1149
Telephone: (505) 827-5562
E-mail: Patricia.Oliver-Wright@state.nm.us
Contract Dates: 5/15/07 to 10/15/07

4.1.2 Resumés and Company Profile and Experience

Cambridge Systematics, Inc.

Cambridge Systematics, Inc. has been offering a full range of services related to transportation policy and research, transportation finance, "best practices" evaluations, and statewide and rural transportation planning since 1972. Cambridge Systematics has supported a variety of transportation-related projects at the national, state, regional, and local levels; and has worked in a range of client contexts including small urban areas, tourism-based communities, and large, primarily rural states. Cambridge Systematics has a long, successful history with MDT and its stakeholders ranging from development and deployment of HEAT – a corridor-level transportation planning and economic analysis toolkit – to current efforts in preparing an update to the Bozeman Transportation Plan. Cambridge Systematics' commitment to client service and high-quality work combined with a broad knowledge of the transportation industry allow for effective leveraging of agency talent and resources.

- **Transportation Policy and Research –** Cambridge Systematics has a successful record of completing transportation research projects for many Federal and state agencies. Our work has included organizational studies; methods to assess the benefit/cost and economic impacts of transportation systems; developing analytical tools for freight and high-occupancy vehicle (HOV) systems; and developing database management systems for transportation planning and decision-support initiatives. Cambridge Systematics currently is supporting the FHWA, Federal Transit Administration (FTA), Volpe National Transportation Systems Center, Environmental Protection Agency (EPA), and DOTs in eight western and southwestern states with on-call transportation services contracts.

- **Best Practice Reviews –** Cambridge Systematics has conducted best practice reviews in topics as diverse as rural transportation planning practices to MPO organizational structure. Our clients for this work, which include transit authorities, state transportation agencies, national organizations and the Federal government, appreciate our ability to adapt outside practices and examples to the local decision-making context. MDT's Performance Program Process and HEAT tool have been the subject of many of our best practices reviews for other agencies.

- **Toolkit Development and Deployment –** Cambridge Systematics has assisted many agencies in developing planning and organizational toolkits that assist in transferring ideas, policies, analytic methods, guidance manuals and planning practices for wider application. We have developed a rural transportation planning toolkit for the American Association of State Highway and Transportation Officials (AASHTO), a transportation planning and land use toolkit for the FHWA, and congestion management toolboxes for the Mid America Regional Council and other MPOs.

- **Land Use and Demographic Analysis –** Cambridge Systematics has helped define the influence of the land use/transportation relationship on demand for services and economic development for municipalities, transit systems, developers, and land owners in many cities across the United States. We have earned a national reputation by identifying strategies to support development and investment consistent with realistic assessments of opportunities and needs.

- **Transportation Finance –** Cambridge Systematics helps our clients develop innovative approaches to financing infrastructure programs and projects including privatization, public-private partnerships, outsourcing, user fees, and intergovernmental cooperative arrangements. We have worked directly with municipal and county jurisdictions to establish impact fee programs to support financing of local and regional transportation projects.

- **Statewide and Rural Multimodal Transportation Planning –** Cambridge Systematics has prepared statewide transportation plans and/or interregional transportation studies that have spanned rural areas for dozens of states, including Arizona, Colorado, Georgia, Kansas, Montana, Nebraska, and New Mexico. In all cases, we have paid special attention to how differences in perception of performance can affect the needs, options and investment priorities, and have served to assist in establishing collaborative interjurisdictional relationships between state agencies and planning partners in rural and small urban areas.

Project Experience

NCHRP 8-36A (Task 40) – National Site Visits on Transportation and Growth – For NCHRP, Cambridge Systematics organized, conducted, and documented site visits to six states, where state, regional, and local agencies have worked to link transportation and land use practices, including "smart growth" practices. The purpose of the tour was to introduce state DOT and other transportation agency staff to successful examples of the integration of land use and transportation and to assist them in sharing these practices

with their colleagues. Tour products included a final report as well as a presentation describing findings and lessons learned. In addition, Cambridge Systematics assisted tour participants in presenting tour findings at conferences, professional meetings, and in national publications.

Georgia DOT Interstate Highway System Plan – For the Georgia DOT, Cambridge Systematics developed a statewide Interstate Highway System Plan. Cambridge Systematics quantified the economic impacts of the interstate highway system; developed a program of projects to meet future needs that is financially feasible; estimated benefits, costs, economic and environmental impacts of the proposed program; related the program to land use development plans and policies; and prepared a technical user manual so that the Georgia DOT readily can update the plan in the future. As part of it work, Cambridge Systematics, assembled and applied a GIS-based toolkit to facilitate consideration of environmental resources and local land use plans during the development of corridor recommendations. This toolkit was developed to provide GDOT, local jurisdictions, and other stakeholders with an ongoing and readily available information source on key resources that could affect the need for interstate improvements and the ability to implement different types of improvements.

NCHRP 8-43 – Forecasting Statewide Freight – For NCHRP, Cambridge Systematics gathered information on statewide freight forecasting methods and practices. Cambridge Systematics identified the needs of states with respect to freight forecasting; assessed the ability of various methods to address those needs; and developed a tool kit that provides analysis with an ability to utilize the best methods. A major product of this project was an Internet-based toolkit of appropriate freight forecasting methods.

Montana Highway Reconfiguration Study – For MDT, Cambridge Systematics led a research study of the economic effects of highway reconfiguration scenarios. The purpose of this study was to evaluate the impact of reconfiguring the State's two-lane highway network on its economy (e.g., additional travel lanes). Cambridge Systematics provided an understanding of the relationship between highway capacity and economic development, providing data and models for quantifying that relationship, and estimating the likely economic impacts of reconfiguration within both a constrained and unconstrained fiscal environment. The methodologies used include highway network modeling, commodity flow, and international trade analysis; and the development of economic development impact tools to cover the full range of impacts. Cambridge Systematics produced a combination of evaluation tools for the State and an economic development-based benefit/cost analysis of various highway reconfiguration scenarios.

Arizona DOT On-Call – Rural Transit Needs Study – For the Arizona DOT, Cambridge Systematics developed regional system solutions to rural transit service provisions in Arizona by reviewing relevant statewide trends and documents, obtaining input from key stakeholders, identifying transit needs in areas where traditional system and regional planning gaps currently exist, and using statistically valid modeling.

Georgia DOT Rural Public Transportation Evaluation – For the Georgia DOT, Cambridge Systematics, as part of a team, undertook an evaluation of all facets of the current Section 5311 rural public transportation program as administered by the Georgia

DOT. Specific tasks associated included: reviewing all current policies, procedures, and materials associated with the program; reviewing the use of state and Federal funds at the local level; a "best practices" review of Section 5311 programs and coordination efforts in other states; identifying coordination opportunities with Georgia Human Service Agency programs; recommending changes to the current Section 5311 Program; and assisting Georgia DOT staff in the preparation of revised program materials and systems.

New Mexico DOT Statewide Multimodal Studies – For the New Mexico DOT, Cambridge Systematics is preparing the State's first Strategic Multimodal Plan by documenting transportation needs, evaluating alternative projects, developing strategy and policy analysis, and recommending project priorities that best address all nonhighway modes across the State. Features of the Strategic Multimodal Plan vision include an application of "best practice" methods and improved databases; development of future transportation system usage and demand estimates; an assessment of future transportation needs and potential project solutions; identification of supporting policies and strategies; recommendation of multimodal project priorities; and the development of ongoing applications of improved methods and databases.

Bozeman Transportation Plan – For the Bozeman Transportation Coordinating Committee (BTCC), Cambridge Systematics, as part of a team, is providing general oversight to the development and application of the regional travel demand model including assessing the adequacy of a base-year model calibration conducted by MDT. Activities include identifying transportation needs and potential investment strategies, and suggesting socioeconomic and network attributes for future-year model runs.

Wine Country IRP Housing, Jobs, and Transportation Project – For the Mendocino Council of Governments (MCOG), Cambridge Systematics, as part of a team, evaluated the potential land use policies and strategies designed to balance jobs and housing and to reduce interregional commuter travel in the four-county region of northern California's wine country. The transportation analysis performed by Cambridge Systematics was used to identify feasible, implementable, and integrated land use and transportation policies and strategies that meet the needs of each county.

SANDAG Downtown San Diego Development Impact Fee Nexus Study – For the San Diego Association of Governments (SANDAG), Cambridge Systematics, as part of a team, provided technical advice on the establishment of defensible facility standards and allocation of facility costs to new development for the Downtown San Diego Development Impact Nexus Study Project.

Tri-Valley Transportation Council Update of the Tri-Valley Fee Nexus Study – For the Tri-Valley Transportation Council, Cambridge Systematics updated the original Tri-Valley Transportation Development Fee Nexus Study, which was prepared by Cambridge Systematics in 1995. The Nexus Study evaluated the funding status of then-current projects included in the fee program and selected major regional transportation projects for inclusion in the revised regional fee program. The analysis determined what share of total funding may be required of new development and how to allocate the funds.

Washington State Joint Transportation Committee Long-Term Transportation Financing Study – For the Washington State Joint Transportation Committee, Cambridge Systematics set forth steps that Washington should take in the short- and intermediate-term to maintain a stable finance system and develop and utilize alternative transportation finance tools for the long-term. These included steps to position Washington to take best advantage of Federal transportation financing opportunities and private initiatives. The project provided tangible, specific options and recommendations for the legislature to consider and implement for future transportation funding.

New Mexico DOT On-Call Planning, Support to the Transportation Finance Futures Task Force – For the New Mexico DOT, Cambridge Systematics coordinated and facilitated meetings of the House Memorial 35 Transportation Futures Task Force across the State. Cambridge Systematics summarized the Task Force process and described major themes in a final report, which was presented in November 2007 by Lieutenant Governor Diane Denish. Cambridge Systematics also provided information from the HM 35 Transportation Technical Committee report regarding particular funding options as directed by the Task Force.

Robert Peccia and Associates

Robert Peccia & Associates (RPA) is an engineering firm offering comprehensive services in civil, transportation, and environmental engineering. Founded in 1978, RPA represents 30 years of service in meeting the infrastructure needs of clients in Montana and throughout the United States. From our offices in Helena and Kalispell, Montana, RPA offers services in Airport Design, Drainage, Environmental Studies, Highways, Natural Resources, Site Development, Surveying, Transportation, Wastewater Management, and Water Supply.

RPA's team willingness to work hard and to meet the highest professional standards is the reason its firm has earned its reputation for high-quality work. RPA's client needs to take priority over other considerations. Everything they do, from the initial planning to the final inspection of the construction, reflects the firm's commitment.

Project Experience

Greater Bozeman Area Transportation Plan – RPA is currently completing the 2007 Transportation Plan Update. This project includes trails network analysis and updates, bike route system analysis and updates, transit recommendations, transportation demand management strategies, traffic calming, traffic modeling, evaluation of the sidewalk network, financial analysis, an extensive public participation process, and identifying existing and future transportation problems. The planning process will culminate with a thorough report that highlights a prioritized set of recommendations, complete with cost estimates for each proposed project. The key issue facing the Bozeman community is unprecedented growth, coupled with the community's overwhelming desire to build on nonmotorized infrastructure as a way to lessen traffic congestion.

Whitefish Transportation Plan – For the City of Whitefish and MDT, RPA has nearly completed the citywide Transportation Plan. The project included an extensive public

involvement process, forecasting of future land use changes, and recommendations to accommodate existing transportation concerns and future corridor needs. The Plan also identified community school-related issues, transportation system management projects, and recommendations to improve the nonmotorized transportation system.

Kalispell Area Transportation Plan – For the city of Kalispell and the MDT, RPA completed a comprehensive, multimodal Transportation Plan Update. Predominately a "city" Transportation Plan Update, the project served to analyze and document existing and future transportation system needs within the Kalispell urban area. This work effort included: data collection and analysis on the "major street network"; turning movement counts and existing/future level of service calculations; evaluation and assessment of pedestrian and bicycle needs in the community; extensive public involvement and coordination efforts; travel demand modeling; and development of both short-range and long-range projects to take the community into the next 20 years.

Greater Helena Area Transportation Plan – For the city of Helena, Lewis and Clark County and the MDT, RPA completed the comprehensive, multimodal combined Transportation Plan Update. This work effort included: data collection and analysis on their major street network; turning movement counts and existing/future level of service calculations at 82 signalized and unsignalized intersections; evaluation of the existing bikeway network in the community; evaluation and assessment of pedestrian and bicycle needs in the community; extensive public involvement and coordination efforts; travel demand modeling; socioeconomic and land-use projections; and development of both short-range and long-range projects.

Great Falls Transportation Plan – For the Great Falls City-County Planning Board, RPA completed the 2003 Transportation Plan Update for their community of approximately 80,000 people. This work effort included: data collection and analysis on their major street network; turning movement counts and existing/future level of service calculations; evaluation of the existing bikeway network in the community; evaluation and assessment of pedestrian and ADA accessible needs in the community; extensive public involvement and coordination efforts; travel demand modeling; establishment of roadway standards to be used on new roadway construction; and development of both short-range and long-range projects to take the community into the next 20 years.

Renaissance Planning Group

Renaissance Planning Group (RPG) is a planning, design, and policy analysis consulting firm specializing in the integration of transportation, land use, and technology. The professional staff members of RPG are skilled in innovative and effective policy approaches, technical methods, course instruction, and building public consensus for solutions that create quality urban environments and livable communities. RPG and Cambridge Systematics have collaborated on several prior endeavors, including design, development, and pilot testing of a new *Transportation and Land Use* course for the National Highway Institute (NHI). Additional projects led or supported by RPG include:

- Regional visioning and scenario planning projects in Charlottesville, Virginia; Binghamton, New York; Waco, Texas; and Alachua County, Florida, including the application of innovative modeling and analysis;

- Corridor studies for U.S. Route 30 in Westmoreland County, Pennsylvania; State Route 50 in Ocoee, Florida; and State Route 57 in New Jersey, addressing land use visioning, access management, activity centers, and other land use and traffic operation issues; and

- A Regional Land Use Study in Martin and St. Lucie Counties, Florida, to evaluate alternative land use and transportation scenarios to avoid making major capacity projects to U.S. 1.

Project Experience

NCHRP 8-52, National Best Practices Guidebook: Integrating Transportation and Land Use in Rural Communities – RPG led a team to develop a guidebook entitled "*Best Practices to Enhance the Transportation-Land Use Connection in Rural America*" for the NCHRP. The study is one of the first in the country to examine rural transportation investments that support community development, and rural land use strategies that maximize transportation capacity and community livability. The study process included a detailed literature scan, nationwide surveys, focus groups, and case study interviews with rural planners, community leaders, and agencies involved in rural transportation, agriculture, housing, community development, public health, and Native American tribal planning. Best practices and strategies to improve both accessibility and livability achieving these results fall into three major activities: setting the regional framework for where and how development should occur; improving local accessibility to targeted activity centers; and enhancing community design. Key factors for success include forming collaborative partnerships, focusing on quality of life and sustainability, involving and educating the public, and developing strong local leadership.

Complete Streets for Older Adults: Research Report and Design Handbook – For the American Association of Retired Persons (AARP), RPG developed a research study and guidebook designed to help transportation professionals and citizen advocates plan and design safe, "complete streets" for senior drivers and pedestrians. The project was led by the AARP Public Policy Institute in coordination with the FHWA, the Institute for Transportation Engineers (ITE), and the Complete Streets Coalition. The study process included: a review and critique of key literature from the engineering and planning professions, particularly focusing on conflicts and gaps relevant to the needs of senior drivers and pedestrians; surveys of state and local representatives on the application of Complete Streets policies and of engineering best practices for senior driver and pedestrian safety; a summit of national leaders in the planning and engineering profession to review research findings and evaluate the draft design handbook; and a webinar to introduce the completed handbook.

Community Visioning Best Practices Manual and Educational Tools – For the Florida Department of Community Affairs, RPG developed a Best Practices Manual that included

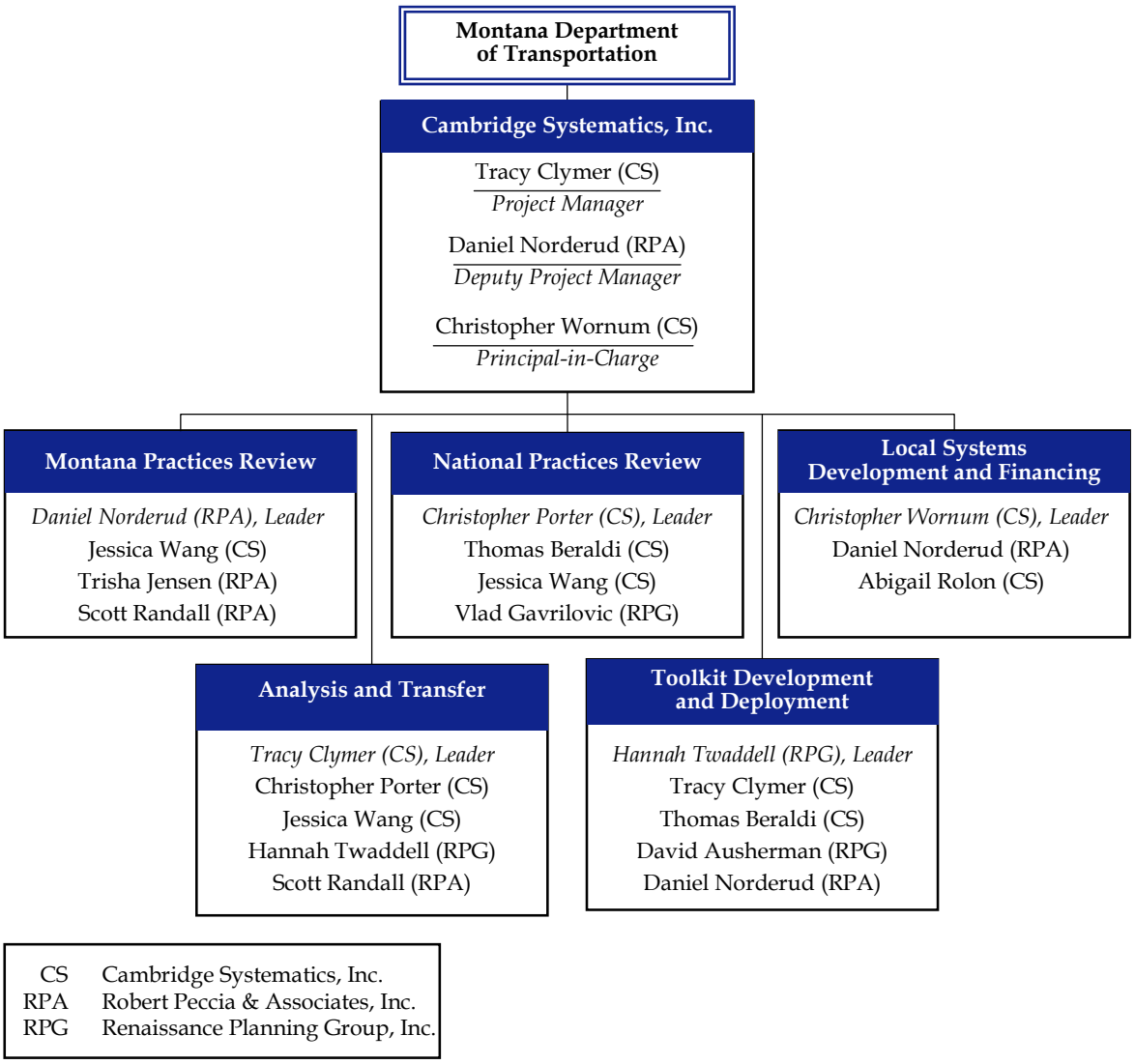
national and statewide research, focus group discussions with Florida planning practitioners, and case study interviews. The Guide, accompanied by a summary brochure and slide presentations, included the following information for local planners and decision-makers: a description of the provisions of Section 163.3177(13) and (14), F.S related to community visioning and the designation of a 10-year urban service boundary; an in-depth discussion of the topics which must be discussed as part of visioning workshops; considerations for designation of a 10-year urban service boundary; a compendium of innovative technical tools and methodologies for conducting visioning processes and framing key issues, opportunities and challenges; techniques to encourage meaningful public participation; and examples and information on how to implement the community vision and urban service boundary through the Comprehensive Plan, as well as local regulations and incentive programs.

Project Management and Staffing

The success of this project ultimately will depend on the skill and commitment of the people working on it. Cambridge Systematics has the ability to assemble a team of experts tailored to your needs. Cambridge Systematics teams are led by senior, working managers, ensuring that each client has the benefit of extensive experience and best practices. The team that develops your recommendations delivers your projects. Your staff gets to know the team during the bidding process and you will not have to form new relationships or educate a new project management team.

Our project management structure has three main roles, the Project Manager, the Deputy Project Manager, and the Principal-in-Charge (PIC). The Project Manager has ultimate responsibility for the project success, and manages the day-to-day administration and technical direction of the project. **Tracy Clymer**, an Associate of CS, is proposed for this role. The Deputy Project Manager works closely with the Project Manager and client on all aspects of the technical work, and helps to coordinate work with our subcontractors. **Dan Norderud,** an Environmental Studies Division Manager of RPA, is proposed for this role. The PIC is responsible for ensuring the overall quality and timeliness of the study, guiding the Project Manager. **Christopher Wornum**, a Principal of CS, is proposed for this role. This management team is supported by a secondary tier of key staff who will assist the management team in conducting the project within their individual areas of expertise. The proposed organization structure of the Cambridge Systematics team is shown in Figure 4.1. Full resumés for all staff can be found in Appendix C.

Figure 4.1 Organizational Chart



Management Staff

Tracy Clymer, an Associate of Cambridge Systematics, brings more than nine years of transportation planning and research experience with expertise in regional and statewide transportation planning, travel demand model applications, performance measurement, and air quality planning and analysis. She has a Master's degree in Transportation Systems Engineering, and a Bachelor's degree in Atmospheric Sciences from the Georgia Institute of Technology. Ms. Clymer is currently working on the Greater Bozeman Area Transportation Plan Update and a number of performance measurement projects that focus on the tools, data, and processes needed to support more comprehensive and non-traditional evaluation of projects. Examples include the SHRP II CO2 Systems-Based Performance Measurement Framework for Highway Capacity Decision-Making; the

Georgia DOT Project Prioritization Study; and the NCHRP 8-70 Target Methods research evaluation. Prior to joining Cambridge Systematics, Ms. Clymer was a Senior Principal Planner with the Atlanta Regional Commission where she provided technical support for long-range planning analysis and managing the transportation conformity process for the Atlanta ozone and $PM_{2.5}$ air quality nonattainment areas. Ms. Clymer developed improved policy and technical procedures to evaluate transportation projects for Federal funding, to include developing revised transportation plan performance measures and modeling tools to evaluate the impact of individual projects on congestion reduction, land use, and the environment. Ms. Clymer is currently a member of the Transportation Research Board (TRB) Transportation and Air Quality Committee, and a former Chair of the Association of Metropolitan Planning Organizations (AMPO) Air Quality Subcommittee.

Daniel Norderud, AICP, a transportation planner of RPA, has 27 years of experience. Mr. Norderud has been involved in the work effort on numerous nationwide and state-wide urban transportation plans RPA has completed. He has helped draft portions of the transportation plans for Bozeman, Helena, Kalispell, Missoula and Whitefish, Montana. He is well versed in the transportation – land use connection. He also participated in the completion of several traffic safety studies at several high-accident locations in Montana, as well as in Glacier National Park, Grand Teton National Park, the Natchez Trace Parkway, and the Blue Ridge Parkway. In addition to serving as Deputy Project Manager, Mr. Norderud will manage all of RPA's internal project activities and prepare/review all technical materials for content, appropriateness, and completeness.

Christopher Wornum, a Principal of Cambridge Systematics, has over 26 years of consulting experience in private- and public-sectors. His areas of specialty include fiscal and financial analysis, economic development, and multimodal transportation planning and research. He has prepared countywide and municipal impact fee programs in over a dozen counties throughout California including Los Angeles, San Diego, and San Bernardino. Mr. Wornum was the project manager for a team of consultants working with the MDT to develop the Highway Economic Analysis Tool (HEAT) that MDT is now using in-house on a going basis to evaluate the economic development potential of any project submitted to MDT for state funding. Mr. Wornum has been an associate faculty member at the Lincoln Institute of Land Policy in Cambridge, Massachusetts where he has taught courses on the application of innovative financing methods for funding regional and local infrastructure. He has been on the faculty at the University of California Extension program for five years where he taught courses on funding local and regional infrastructure, use of value capture, and the interplay between economics and land use law. Mr. Wornum received graduate degrees from the Massachusetts of Institute of Technology in Management Science and Urban Planning.

Other Key Staff

Christopher D. Porter is a Senior Associate of Cambridge Systematics with expertise in transportation planning, land use, economic impacts, and nonmotorized travel. Mr. Porter's work on transportation and land use encompasses regional visioning, transit-oriented development (TOD), multimodal corridor planning, and rural transportation planning. He was the lead developer of a new three-day NHI course, *Transportation and*

Land Use, which covers practical strategies for linking transportation and land use at all levels, ranging from regional visioning to project-level techniques such as context-sensitive solutions, traffic calming, and pedestrian and bicycle improvements. He has developed toolkits and case studies for the FHWA and NCHRP documenting best practices in transportation and land use planning linkages and implementation methods and is a designated Technical Expert on Land Use for the AASHTO Center for Environmental Excellence.

Abigail Rolon is a Transportation Analyst of Cambridge Systematics with experience in the areas of transportation finance, economic analysis, and benefit/cost analysis. For the New Mexico DOT, Ms. Rolon collaborated in analyzing the State's current and future transportation needs to identify appropriate funding strategies for a sustainable transportation system at the state and local level. Ms. Rolon undertook a similar study for Washington State Ferries in which funding strategies were identified at the state and local level to fund operations and capital investments of the ferry system. For the Tri-Valley Transportation Council, Ms. Rolon supported the research on updating the Fee Nexus Study. Recently, Ms Rolon undertook a research on value capture mechanisms from developer fees to tax increment financing to fund transportation investments.

Jessica Wang is a Transportation Analyst with experience in the areas of transportation planning and engineering, corridor analysis, and economic and financial analysis. Ms. Wang is leading efforts to update the Montana statewide long-range transportation plan (TRANPLAN 21) to be compliant with the SAFETEA-LU requirements. The limited amendment process included outreach and consultation with economic development and land use, environmental, and other transportation planning agencies. For the Metropolitan Planning Commission (MTC), Ms. Wang is a key member of a team studying the effects of local land-use policies on goods movement in the San Francisco Bay Area. She is assisting with the identification and projections of key drivers influencing the demand for land in the study corridor and studying the resulting transportation, economic, and environmental impacts of shifts in goods movement. For the Texas DOT, Ms. Wang interviewed stakeholders, developed evaluation criteria, and helped to determine the feasibility of innovative financing and tolling strategies that could be used to support infrastructure development through the rural Ports to Plains corridor.

Hannah Twaddell, a project manager of RPG, has more than 20 years of experience in regional and local planning, with an emphasis on transportation, land use, community design, and public participation. She served for 14 years as chief staff for the Thomas Jefferson Planning District Commission and the Charlottesville-Albemarle Metropolitan Planning Organization in Virginia. She directed a groundbreaking scenario planning initiative, funded by the FHWA TCSP program, which resulted in a 50-year vision for the region. As part of that project, she helped create CorPlan, the GIS-based scenario planning model that has been used subsequently by RPG for plans and visioning projects throughout the country. Ms. Twaddell's recent and current work includes a regional visioning process for Greater Binghamton, New York; visioning and scenario planning projects for Waco, TX and Westmoreland County, PA; "smart growth" corridor studies for Edison Township and Warren County, NJ; a national study of best practices in rural land

use and transportation planning for NCHRP; and a three-day, nationally distributed course on integrating land use and transportation planning for NHI.

David Ausherman, ASLA, is a Principal of RPG with expertise in large-scale design, urban and regional planning, and computer modeling. His experience has been in both the public and private sectors and has included a diverse range of projects at local, city-wide, regional, and statewide scales. He led the development of the PLACE3S scenario planning tool, and is serving a senior technical role in refining and advancing CorPlan, the scenario planning model developed by RPG. Mr. Ausherman began his career with the Portland Metro, where he played a key role in the scenario planning process that resulted in Region 2040, a 50-year plan that integrates land use, transportation, and open space planning for Oregon's most populous region. He was the key staff in developing scenarios, conducting complex analyses, and developing recommendations for signature projects such as Envision Utah, Chicago Metropolis 2020, and Envision Central Texas.

Vladimir Gavrilovic, AICP, is a planning principal and senior designer for RPG, specializing in urban design and transportation and community planning. He has more than 20 years of experience in land and community planning, transportation corridor and network design, site design, environmental resource assessment, and the development of urban and rural design standards. His work has included projects for a wide variety of local and regional governments and agencies, as well as The Colonial Williamsburg Foundation, the Virginia State Parks Division, and the Smithsonian Institution. He has specialized in the development of urban design, community planning, and environmental protection strategies within a transportation planning context. Prior to joining RPG in 2006, Mr. Gavrilovic was principal and founder of Paradigm Design, an award-wining firm specializing in sustainable land planning and design.

Scott Randall, a member of RPA's Traffic and Transportation Division, is a graduate of Montana State University with a bachelor degree in Civil Engineering with emphasis in Transportation. He is working on the Bozeman Area Transportation Plan Update, the Whitefish Transportation Plan, and the Whitefish U.S. Highway 93 Urban Corridor Study. These projects are all cooperative transportation planning projects between local government and the Montana Department of Transportation and occurring in areas of the state experiencing rapid growth.

Trisha Jensen is a transportation planning technician for RPA and has worked on several past urban transportation projects. She has provided data collection and analysis services for the Kalispell Area Transportation Plan – 2006 Update (ongoing), the *Greater Helena Area Transportation Plan (2004 Update)*, the *Great Falls Student Safety Plan (2004 Update)*, and numerous *Traffic Impact Studies (TISs)* for private development clients throughout Montana. Ms. Jensen is well versed in data collection and analysis, traffic safety studies, arterial corridor improvements plans, commercial development impact analysis, streetscape feasibility studies, conducting traffic counts, parking studies, pedestrian/bicycle studies, and speed zone investigations.

4.1.3 Method of Providing Services

Problem Statement

The development of effective tools to assist Montana communities with transportation and land use planning has the potential to enhance communication between MDT and its local transportation partners regarding the nexus between local land use decisions and transportation infrastructure needs. MDT faces a challenge in being expected to mitigate the effects of land development decisions that remain with the purview of local jurisdictions. Essentially, MDT is expected to provide highway capacity for purely local traffic movements, which limits funding for interregional and interstate projects that can drive statewide economic growth. In an era of greatly limited resources, a development-by-development approval process leads to the obvious results of funneling local traffic to the state highway system and inadequate funding for a complementary local network.

MDT is in no way unique in its experience with local development approval. Even in states such as California and Florida with strict environmental review and concurrency requirements, the state transportation agency finds itself in a nearly constant struggle to protect the role of the state highway system. At its heart, these results seem to stem more from patterns of communication and decision-making rather than an overwhelming lack of analytic potential. In many cases, it is much easier to react reactively to a specific proposal than to attempt to proactively anticipate and direct a community's direction, particularly when economic growth which may have been elusive for years has finally arrived.

States that have been successful in building a collaborative process for integrated transportation and land use decision-making have not followed any unique model – other than patience and perseverance. Given this, the national "best practices" review is quite appropriate and will be quite informative, but will only result in a successful outcome if the tools, practices, and policies are scaled for application in Montana.

Effective coordination of transportation and land use planning is critical to long-term economic growth and fiscal well-being of any community. Montana's expanding cities and their surrounding areas can greatly benefit from a structured review of the experience of other small urban, suburban, and rural places around the country, particularly in cases where new approaches for linking transportation and land use have been developed. One result of this project will be that Montana can identify and adapt tools for transportation and land coordination challenge that have proven to be effective in a number of circumstances. Another outcome will be identification of gaps in national practice. By undertaking research in this area, Montana can help advance further research for the more promising approaches that have not yet been fully developed or tested.

Objectives and Background Summary

This research is intended to develop a toolkit of off-the-shelf policies, practices, analytic tools and other ideas that can assist MDT and its local partners in expanding cities to

better coordinate transportation and land use planning and decision-making. The nominal objectives for the research are the following:

- Identify and transfer to local governments "off-the-shelf" tools now in use nationally that are practical in Montana; and

- Identify promising but underdeveloped planning approaches that are worthy of further research and/or development.

More broadly, however, a successful research product will promote advance planning for future land use development with a process that encourages early engagement of MDT by local jurisdictions so that transportation impacts and needs can be avoided, minimized, and/or otherwise addressed. One way to address the impacts will be to anticipate them (through proactive planning) and then coordinate transportation investments to assure that local, regional, and interregional traffic is able to use facilities that are of appropriate functional nature. The research will deliver this successful product by focusing on four issues:

- **Development and Extension of Local Street Networks –** Sustainable community development relies heavily on the development of integrated and coordinated transportation networks. The design of the network is critical to future transportation and land use harmony. For example, ITE recommends a maximum block length of 400 to 600 feet in order to ensure adequate pedestrian connectivity. Sidewalk provisions are also very important for achieving flexible design standards that can serve as a foundation for meeting future needs. For example, other communities have created coordinated local and regional transportation networks by using the transportation element of local comprehensive plans to specify the locations of local streets, through the development of subarea plans, and through subdivision design requirements or guidelines that include internal and external connectivity measures. State DOTs can plan a role by setting requirements for connections to state highways, providing model guidance to local jurisdictions, and working with local jurisdictions on voluntary review of major projects and subarea plans. Even if comprehensive plans, zoning, and/or subdivision regulation are lacking, communities can still work on a voluntary basis to achieve design principles that support efficient linkage of transportation and land use.

- **Local Transportation System Financing –** Transportation system improvements are costly and often present financial challenges for local governments, particularly when undertaken retroactively. Whether undertaken in advance or after the fact, transportation improvements cost money, and government agencies across the country seem to face challenges in raising the necessary money from existing residents and businesses. Therefore, linking the financing of transportation improvements to the growth that creates the need is often a popular "tool" in many communities. In some instances, local improvements are financed through municipal capital improvement programs (for public roads) or through developer contributions (for roads built to serve new development). In other instances, a local option sales tax has been used to create a steady funding stream. At the other end of the spectrum, some communities have

addressed revenue shortfalls by reducing infrastructure costs. "Smart" transportation networks that support nonhighway travel and shorter vehicle-trips are not necessarily more expensive to build than standard networks that are exclusively oriented toward automobile travel. Additional pavement to create local through-street connections may be offset by reduced capacity needs on major collectors and arterials. Some communities have also found that their standard for road width is wider than it needs to be, and that cost savings can be achieved by reducing those requirements.

- **Assessment of Development Impacts on Local and State Roads –** Local authorities consider and act upon specific development proposals. While analysis approaches for individual projects are generally well-known and in widespread use, the overall decision-making process suffers when then are applied solely on a development-by-development basis without consideration of comprehensive or cumulative impacts. Even when decision-making occurs on a project-specific basis, methods such as traffic-shed analysis represent an approach to coordinating development and infrastructure needs at a broader corridor level rather than simply reacting to projects on a case-by-case basis. In addition to methods to assess impacts, an effective toolkit will include examples of broadly-defined mitigation strategies including travel demand management, access management, and pedestrian-oriented/mixed use site design, as well as more traditional traffic mitigation techniques such as turn lanes and intersection improvements. Transportation agencies can establish guidelines for site design to reduce vehicle-trips on the primary road network and establish incentives or work with local governments on a voluntary basis to review development proposals. For example, Michigan DOT has worked with local governments on access management through a handbook and model ordinance, series of workshops, partnerships on corridor asset management projects, and assisting property owners with shared driveway agreements. Missoula is an example of a city that has implemented TDM strategies using Congestion Mitigation and Air Quality improvement program (CMAQ) funding.

- **Directions for Multimodal/Transit Development –** There are options for coordinating land use with nonhighway transportation investments, even in low density settings. However, it is important to remember that, due to their relatively small size and lack of traffic congestion, most communities in Montana are unlikely to achieve a significant mode shift towards transit. Therefore the concept of "transit-oriented development" is different than in larger cities with fixed-guideway transit. However, even in smaller towns, designing for a more compact, mixed-use, walk able can be an effective way of shifting short trips from automobile to walking or bicycling, as well as making transit more feasible for people who cannot or would prefer not to drive for longer trips. Local decisions such as establishing street grids, reducing setback requirements, requiring parking to be located behind buildings, requiring pedestrian facilities with new development, and revising zoning to allow mixed-use projects are all examples of methods that have been widely applied in the U.S. and may be applicable to Montana communities, reflecting traditional small-town and small-city development patterns.

Benefits

The toolkit and underlying research will produce benefits for MDT, local jurisdictions in Montana, and similar high-growth communities in other states. Communities everywhere experience challenges in proactively planning and implementing transportation improvements when economic growth rates accelerate. A frequent results of these challenges is that "planning" occurs on a development-by-development basis, with little or no cohesive thought as to how to fund and implement an integrated and cohesive transportation system consisting of local through routes, appropriately scales regional and interregional highways, and other land design, infrastructure and management features that can minimize the demand for highway travel. By exploring and adapting approaches that have been followed to meet these challenges, the research has the potential to deliver four key benefits:

- Provide tangible and proven guidance that MDT and local planning professionals can use to help frame discussions with local decision-makers;
- Increase opportunities for interagency communication and trust;
- Improve credibility with the general public, who frequently view transportation professionals as happily advocating capacity increases to major roadways; and
- Ultimately, save money by reducing the need for retroactive (and very expensive) capacity increases on state highways in expanding urban areas.

Research Plan

Task 1. Scan, Outreach, and Literature Review

Research to identify national practices for coordinating transportation and land use, and assessment of their applicability to a full range of Montana governance structures, is central to the project purpose. Best practices in the State of Montana will also be considered.

Subtask 1.1 Review of Montana Practices and Context

The current trends in transportation planning in Montana have been fairly consistent over the years. We are increasingly seeing in the urban transportation planning efforts that the public is demanding more analysis and planning related to "quality of life" issues over the traditional congestion relief and transportation management issues. This does not always coincide with the desires of local government officials. The conventional way of completing transportation plans in Montana have followed the following four-step process, which is increasingly being viewed as short sighted and not truly multimodal:

1. Inventory the conditions and characteristics of the existing transportation system;
2. Analyze inventoried data to determine the relationships that affect development, transportation demand, and transportation system usage;

3. Forecast the future development patterns and the associated travel demand, supply and performance of the transportation system; and

4. Evaluate the forecasts to decide the best transportation improvements.

As is the case in many other parts of the nation, Montana strives to accomplish the following objectives in their current transportation planning efforts:

- Support the economic vitality of Montana;
- Increase the safety of the transportation system for motorized and nonmotorized users;
- Increase the security of the transportation system for motorized and nonmotorized users;
- Increase the accessibility and mobility options available to people;
- Protect and enhance the environment, promote energy conservation, and improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes throughout the State, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.

Based on Census data these are expanding cities (rapid growth rates from 2000 to 2007). The following lists population estimates as of July 1, 2006, and rate of change since 2000:

Large Cities			Moderate-Sized Cities		
City	**2006 Population Estimates**	**Rate of Change Since 2002**	**City**	**2006 Population Estimates**	**Rate of Change Since 2002**
Billings	100,148	+11.5%	Polson	4,952	+22.5%
Missoula	64,081	+12.3%	Belgrade	7,323	+27.8%
Great Falls	58,536	+3.3%	Hamilton	4,644	+25.3%
Kalispell	19,432	+36.6%	Whitefish	7,723	+53.5%
Bozeman	35,061	+27.8%	Lewistown	6,083	+4.6%
Helena	27,885	+8.2%	Columbia Falls	4,676	+28.3%
Butte-Silver Bow	32,110	-5.3%	Livingston	7,279	+6.2%
			Miles City	8,083	-4.8%

Across Montana, recent planning efforts for transportation and other public infrastructure are increasingly encountering four issues:

- Many local communities experience frustration in that the Transportation Plans being produced do not have any regulatory meaning to them unless it is for one of the three MPOs in the State (Great Falls, Billings, or Missoula). For the remainder of the urban areas, transportation planning efforts are often met with skepticism due to the lack of regulatory backing. In several of these areas, local elected officials and staff question why they should even do a Transportation Plan when it does not set forth concrete, funded recommendations.

- There are also significant hurdles with governmental relations. There is a myth that the FHWA and the MDT only serve to plan and build roads throughout the community to serve traffic flow only. Local communities want more focus put on livability and amenities (transit, nonmotorized, etc). In fact, in several of the urban areas (Missoula, Bozeman, and Whitefish), the real big issue in the Transportation Plan's have to do with roadway typical section widths. This is a fundamental issue; whereas, local communities are desiring narrow land widths and streetscape amenities, while the MDT has their own hands tied due to the FHWA requirements for principal arterials, minor arterials, and collectors. This is a large issue that is increasingly brought to the forefront in all the Transportation Plans.

- The subject of "roadway impact fees" have also heightened awareness and increased scrutinization of the State's Transportation Plans. The 2005 Montana State Legislature drastically changed the way roadway impact fees can be collected, and the legislation required a great deal of justification to be provided on roadway and intersection "levels of service." Because of this, and the pressing interest that the urban areas have on collecting impact fees, most Transportation Plans are being manipulated and scrutinized because of the close connection to the roadway impact fee discussions.

- There also seems to be an ever increasing interest in transit in all of the urban areas. The condition of transit in the urban areas seems to rise to the forefront lately with the increase of fuel prices, and many of the Transportation Plans have only a cursory component to them regarding transit usage and feasibility.

This research effort will explore these and related issues through a structured review of local infrastructure plans.

Subtask 1.2 Interview Local Transportation and Land Use Professionals

Many types of organizations and agencies, both public and private, play an important role in transportation and land use planning. Decisions regarding land development or infrastructure investments for any given piece of land can involve several stakeholders with diverse (and sometimes conflicting) goals, including private developers and landowners, municipal and tribal governments, regional councils, state agencies, Federal agencies, and nonprofit organizations.

Land use and transportation policies and decisions made by any one of these entities can have a profound impact upon all the others, not only in regard to the immediate sphere of the geographic area involved, but also throughout the broader region, statewide, or even nationally. Their planning capacities, financial resources, governing structures, and decision-making processes vary widely. Communication and collaboration among these interests can be difficult to achieve.

A hallmark of successful communities is their ability to work collaboratively, finding solutions and developing strategies that support the interests of all those involved in shaping the future. In order to gain a complete understanding of how the "players" involved in land use and transportation decisions work, individually and collectively, throughout Montana, the CS team will initially reach out to a broad spectrum of organizations and agencies through a simple, widely distributed online survey.

In addition to providing a broader understanding of the land use and transportation planning process in Montana, the survey will provide valuable information on the best candidates for follow-up telephone interviews. This will help to ensure that the interview sample covers not only a balanced array of different geographic areas and community growth types, but also pinpoints those communities that are using innovative, successful approaches to integrating land use and transportation.

Subtask 1.3 Literature Review of National Practices

The scan and literature review of national practices for this project will take advantage of the numerous resources that have been published on best practices in "smart growth" and transportation-land use coordination at a local level. Examples of these resources include the following:

- The National Highway Institute (NHI) course, Transportation and Land Use, contains examples from throughout the country of tools and techniques for transportation-land use coordination such as access management, local street network design, and designing development to support transit. Rural and small community examples are included – for example, connected street networks in Issaquah, Washington, and access management in Colorado. Project team member CS led the development of this course, supported by RPG.

- National Cooperative Highway Research Program (NCHRP) Report 582 documents best practices to enhance the transportation-land use connection in the rural United States, and includes case studies from Colorado, Arizona, Oregon, and California. Team member RPG was the lead author of this report.

- Publications by the International City/County Management Association (ICMA) and the Smart Growth Network, including Getting to Smart Growth: 100 Policies for Implementation and Getting to Smart Growth II, include numerous policy ideas on topics such as land preservation, infrastructure coordination, and multimodal development, as well as case studies of communities that have applied these policies.

- EPA Smart Growth Technical Assistance reports have addressed community development issues in locations including McCall, Idaho; Spokane, Washington; and Cheyenne, Wyoming.

- The Local Government Commission has produced case studies on topics such as emergency response and traditional neighborhood street design, transit-oriented and compact development, and practices for enhancing small towns and suburban communities.

- American Planning Association (APA) publications such as Randall Arendt's Rural by Design, have documented land use planning techniques for rural communities.

- The Institute of Transportation Engineers (ITE) proposed recommended practice, Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities, establishes network level objectives for street connectivity, as well as street and intersection design guidelines.

- Conference proceedings, such as presentations from the annual New Partners for Smart Growth conference have addressed rural transportation and land use planning issues.

- Project experience contributed by team members.

Transportation plans and other resource documents from other states – especially Western states – will also be reviewed to look for relevant tools and techniques. For example, the Idaho Transportation Department's Corridor Planning Guidebook includes approaches to working with local governments to coordinate transportation and land use planning at the corridor level. *PlanCheyenne* is an example of a recent comprehensive land use and transportation planning effort for a mid-size Western community that includes numerous useful tools for coordinating transportation and land use.

The literature will be scanned to identify 1) tools that are relevant to smaller communities and rural areas, particularly in the western U.S.; and 2) case studies of relevant applications. A literature review template will be developed that categorizes tools and examples by the four topic areas identified in the RFP – local street networks, local transportation system financing, assessment (and mitigation) of development impacts, and multimodal/ transit-supportive development.

Subtask 1.4 Interviews of Current Users

Once the literature review is completed, the team will compare results and assemble a consolidated list of policies, programs, and analytic processes that are essentially similar and represent similar "tools." The team will then contact a diverse set of users of each tool to confirm information gathered in the literature review and begin exploring additional issues such as successes/failures, implementation experience, and any gaps in their approach and plans for addressing the gaps.

Task 2. Compilation and Analysis

The findings from the literature review described above will be compiled in a summary format that lists tools by topic area, and identifies relevant examples of the application of each tool. The findings from the literature review will be combined with the findings of the interviews to identify the tools most relevant to Montana, and to focus on the issues that represent the greatest barriers to implementing these strategies in Montana communities.

A primary focus of the literature review will be on how innovative strategies were actually implemented (e.g., the institutional relationships that had to be developed, funding sources, and how any particular legal or political issues or barriers were worked through). Another key focus will be ensuring variability in tool types so as to meet the needs of a broad range of potential users.

Subtask 2.1 Analysis of Tools

The compilation of tools will include, for each tool, a concise statement of:

- The types of communities or geographic contexts in which the tool is most applicable;
- Respective roles and responsibilities (i.e., which agencies or entities need to be involved in implementation, and the mechanism(s) through which the strategy would be implemented (e.g., local comprehensive plan, design guidelines, development review process));
- Any legal issues related to implementation in Montana;
- Expected feasibility and obstacles from a political standpoint (including potential support or opposition from developers, landowners, state or local agencies, elected officials, and the general public);
- Cost requirements and potential funding sources;
- Technical and administrative requirements (e.g., modeling and analysis, enforcement); and
- Success factors and other lessons learned.

Subtask 2.2 National Methods

From the review and analysis conducted thus far, approximately 10 to 15 strategies for transportation and land use coordination will be identified. This list of national methods will include those that are most relevant to a wide range of Montana communities and those that could be widely accepted and adopted in Montana.

Task 3. Gap Analysis

This task will evaluate whether there are gaps in tools, strategies, and methods for which current techniques do not exist or are not well-developed. Some examples of potential gaps might include:

- **Analysis techniques –** For example, a sketch-level method to estimate the trip reduction expected from walkable, mixed-use developments in small communities, or the amount of traffic removed from a state highway through access management and internal connectivity;

- **Model ordinances or statutes –** For example, data and experience specific to the need for more flexible development density, parking requirements, and zoning codes in small, growing communities;

- **Legal or process tools with elements specific to Montana –** For example, a standard agreement for coordinated development review between the state and local jurisdiction, or between neighboring jurisdictions; and

- **Fiscal requirements or incentives –** For example, state enabling legislation might be required in order to allow for new funding mechanisms to support local transportation infrastructure.

Subtasks 3.1 and 3.2 Analysis and Technical Memorandum

The gap analysis will include a broad array of descriptive tool characteristics, including but not limited to, the following:

- The need not currently served;
- The purpose and application of the proposed new tool;
- Probable pre-conditions for use;
- Probable short- and long-term resource needs (i.e., cost); and
- Possible partner agencies or entities for future tool implementation;

Results of the analysis and market assessment (Subtask 3.3) will be included in a Technical Memorandum.

Subtask3.3 Assessment of Market for Research

The project team will use its extensive experience working with Federal research bodies, state DOTs, as well as local and regional agencies throughout the country to offer advice on the extent to which a particular gap may be of broader interest, costs of research and tool development on these topics, and potential partnerships and funding sources.

Task 4. Stakeholder Engagement and Tool Refinement

This task serves to gauge a broader level of state and local opinion about the tools identified. It will also serve as a means to solicit input for discussion and refinement of the tools. It will also serve as a final review of the completeness of the gap analysis conducted in Task 3.

Subtask 4.1 Technical Panel Discussion

A concept-level mock-up of the tool kit will be presented in draft form to the State and its Technical Panel. This list and description of the tools proposed for inclusion in the toolkit publication will be the subject of a facilitated discussion about the potential applicability of the tools, including their political viability and consistency with existing policy structures. Input will be solicited in such as way as to garner refinements to the tools, as needed. Key technical staff will be present at this discussion to ensure that dialogue is productive and that refinements are technically feasible.

At this time, we anticipate that a cornerstone of the toolkit will be case studies, drawn from the interviews, that will help Montana planners and decision-makers understand the process their peer communities went through to identify and solve their problems, and to envision new and specific approaches to improve their own planning processes.

The case studies will describe the community's situation the outcomes they achieved (i.e., *what* was done). But in order to be truly useful, they must also provide clear information and insights about *why* the project was initiated, *who* was involved in the process; and *how* they addressed their concerns. Good case studies provide readers with a comprehensive understanding of the factors they should consider and address in order to plan and conduct a successful planning or problem-solving process.

Toward this end, we can borrow some insights and wisdom developed over the past few years in the realm of highway design. The Context-Sensitive Solutions (CSS) approach endorsed by U.S. DOT and many state agencies, establishes an open, interdisciplinary framework to design a roadway that fully considers the community's values concerning aesthetic, historic, and scenic characteristics, along with the

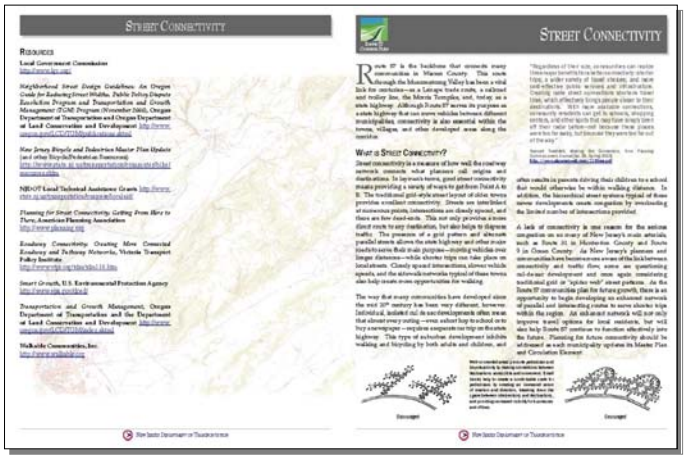
Key Success Factors for Context-Sensitive Solutions

- ***Context –*** *Firmly ground the process, literally and figuratively, in the context of the community's natural and built environment as well as its unique identity and resources. Consider environmental, cultural, and fiscal factors as determinants in decisions about where and how to locate future development, rather than as impacts to be mitigated after the fact.*
- ***Consideration –*** *Assess a wide variety of options, being fully open to new ideas and perspectives while staying grounded in the particular place, time, and situation at hand.*
- ***Communication –*** *Foster meaningful public involvement from a wide variety of people and interests. Communicate in a variety of ways, using new and traditional technologies ranging from hands-on community workshops and facilitated dialogue to web-based modeling tools and visual preference surveys.*
- ***Collaboration –*** *Use an appropriately structured, interdisciplinary, decision-making process that involves all stakeholders in meaningful ways, clearly respects and responds to public input, and supports the iterative nature of thoughtful planning.*

safety and mobility concerns essential to transportation planning. This approach has proven highly successful as a method to plan and design transportation solutions that support community goals. The structured process of CSS produces outcomes that work.

Drawing from the CSS approach, the team has identified a set of key success factors (shown in the box at right) for developing comprehensive, sustainable solutions to a wide variety of planning and development concerns and goals. We propose to use this proven framework to help guide discussions, and to describe the processes used by case study communities.

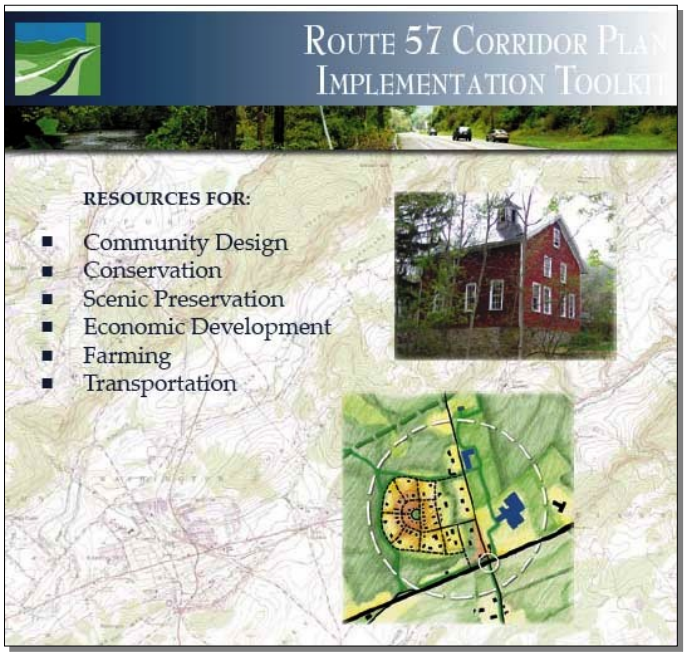
We will organize and format the case studies in a way that makes it easy for readers to find the information and wisdom most relevant to their needs. Based on information gathered through the literature review, focus groups, and follow-up interviews, each case study will address the information contained in the suggested format below. They will be illustrated with photographs, maps, and graphics that give the reader place-specific references for the context, process, and impacts of each project. A potential outline for the case studies includes the following:



- The Setting – What Were the Community's Challenges and Issues?
  - Community characteristics (location, size, sociocultural identity, government structure, planning capacity, etc.);
  - Issues addressed (economic development, environmental preservation, keyed to best practices guide and self-assessment tool); and
  - Catalyst event(s) that initiated the innovative solution cited in the study.
- The Project – What Did They Do?
  - Description of the solution;
  - Timeframe and milestones;
  - Results and outcomes; and
  - Funding amounts and sources.
- The Process – How Did They Do It?
  - Context;
  - Consideration;
  - Communication; and
  - Collaboration.

- **Lessons Learned:**
  - What worked well; and
  - What they would do differently.
- **Trying This at Home:**
  - Recommendations and observations about transferability of this approach to other communities; and
  - Contact information (web site, phone numbers, e-mail addresses).

Subtask 4.2 Stakeholder Engagement



An additional level of input will be obtained from identified stakeholders following the technical panel discussion. It is anticipated that approximately 10 stakeholders will be identified in cooperation with the technical panel, and may include state and Federal agencies; Montana Association of Counties, League of Cities and Towns; Montana Association of Planners; Montana Smart Growth Coalition; and similar. A structured list of questions will be generated to solicit their advice. Questions may include the following:

- What do you see as the barriers to effective utilization of these transportation-land use tools?
- Does the toolkit address the issues currently being faced by local governments?
- If not, what is missing?
- What would be a smart next step for the State?

These dialogues are also likely to inform the gap analysis and provide refinement to the toolkit and future research statements.

The CS team is also proposing to design and conduct a one-day *Smart Transportation and Land Use Summit* that can serve to educate and glean input about the toolkit from DOT staff, local and regional planners, and local officials. Proposed toolkit elements will be presented, with exercises and facilitated dialogue to promote information-sharing and the development of new ideas. Upon completion of the research project, MDT could repeat the summit on a periodic basis, providing the State with valuable information and insights

that can be used to update the toolkit. If scheduling allows, it would be ideal to hold this summit in conjunction with a future Montana Association of Planners conference.

Subtask 4.3 Identification of Additional Research Problem Statements

Some of the gaps that are identified might be of great interest to other agencies. For example, there would undoubtedly be national interest in a sketch-planning tool to estimate trip reduction impacts of walkable, mixed-use developments in small communities. Similarly, research on how trip generation and parking needs in small, growing communities may differ from national guidance and averages, as well as strategies to avoid overbuilding facilities for high-peak conditions, would have broad interest for other areas with a tourism-based economy. Such research could potentially be funded through pooled fund programs such as NCHRP, or in partnership with other state DOTs. The Cambridge Systematics will prepare drafts of NCHRP or TCRP Research Problem Statements for topics mutually identified by the team and Technical Panel.

Task 5. Completing and Deploying the Toolkit

The State will use the Toolkit, along with other materials, to support ongoing local technical assistance for integrated land use and transportation planning. For example, the State can use the material from the book to structure a series of presentations and workshops around the State; to distribute educational material and resource information through venues such as the agency web site; and to encourage information-sharing and networking among local communities.

The educational and training needs of local communities will vary widely: some will need to start at the beginning, with education of staff and local officials on the purpose and process of integrated planning. Others will be ready to initiate structured dialogue with key stakeholders, and may need support and/or training in communication, facilitation, and the development of materials that quickly and effectively convey key concepts. Still others will be ready to invest in technical analysis tools and conduct a full-fledged integrated planning process with their entire community.

Our approach is structured to provide the State with multifaceted sets of resources for educating Montana planners and decision-makers about the integrated planning process, and encouraging an ever-widening group of communities to develop their own plans and projects. In addition to the final report, presentation, and project summary report, the CS team will develop a range of resources to facilitate deployment of the kit, such as the following:

Educational Materials – The Toolkit will include a summary brochure suitable for stand-alone distribution, as well as fact sheets, case studies, and a searchable database of resource materials. The team proposes a multimedia format for the Toolkit, using hard copy, on CDs, and web-based strategies for disseminating the information. Hard copy materials will be designed in ways that allow the State to efficiently distribute updates from time to time. For example, the Toolkit can be produced in a sturdy loose-leaf binder with pockets that allow owners to add or replace materials as time goes on.

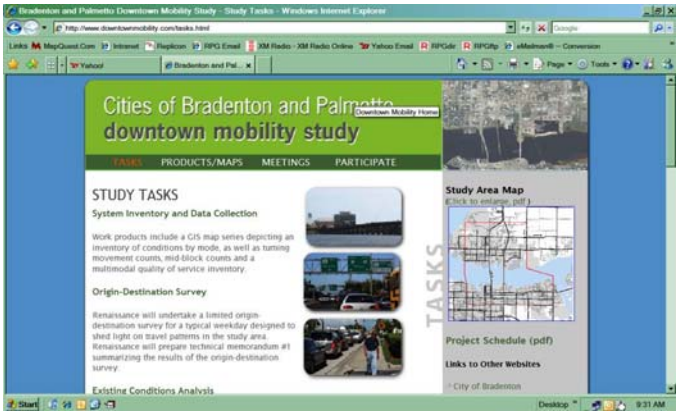
All the educational materials will be formatted in ways suitable for distribution through multiple venues, from paper books and brochures to interactive CDs and DVDs with audio-visual materials. Web-based and CD-distributed Toolkit materials will include, at a minimum, a PDF version of the Toolkit with hyperlinks inserted throughout the document that help the reader find relevant material within the Toolkit as well as resource documents compiled for the literature review.

Integrating Adult Learning Techniques Into Toolkit

Understanding of, and attention to, adult learning techniques is required to ensure that educational materials and activities are appropriate for the audience. Characteristics of successful adult learners include a desire to know why they should learn something; a desire to be self-directed; the ability to connect new information with their prior experience; and a task-centered approach, meaning they learn better when they can apply knowledge to a specific example, problem, or life situation. Adult learning techniques, such as the following, will be built into the design of all Toolkit materials:

- ***Clearly Stated Objectives –*** *Materials and activities such as workshops should ensure that participants are clear on the overall objectives of the course, as well as the objectives for each module or lesson.*
- ***Dialogue –*** *Through techniques such as carefully structured workshop questions and self-evaluation sheets in print materials, the Toolkit will provide a more interactive instructional experience, rather than a straight lecture, and allow participants to consider their own experiences while sharing and learning from others.*
- ***Exercises –*** *In addition to frequent opportunities to reflect and share ideas through structured dialogue, the Toolkit may provide exercises that encourage participants to engage in problem-solving. These exercises provide a way for readers and participants to internalize the information by applying concepts to their own lives and situations.*
- ***Engaging Relevant Local Issues and Concerns –*** *During real-time activities, participants will be given the chance to raise specific questions or issues of interest. The team will ensure that all topical questions are answered either at an appropriate point in the course or, if necessary, through follow-up correspondence. In addition, the Toolkit will include a cross-referenced index that provides readers with a way to quickly find information that is particularly germane to their community's characteristics and/or specific types of situations.*

Peer Network – The focus groups and interviews conducted under Subtask 1.2 can be structured to serve a purpose beyond data development. The dialogue with and between participants can form the basis for an ongoing network of local planning staff and officials who can share information with one another, participate in events such as the proposed summit, and support the State in its ongoing outreach and education initiatives with all communities. In addition to generally raising awareness of the information covered in the toolkit, members of this network can participate in "train-the-trainer" workshops that enable them to provide presentations and workshops within their own communities and professional associations. The CS team will provide the State with a database of candidates for the peer network and a simple strategic plan to establish and maintain ongoing communication.



Updateable, Interactive Webpage – The team does not recommend creating hyperlinks within the PDF file that connect to outside web sites, as they will be difficult to keep up to date. In order to provide readers with the opportunity to find web-

based resources above and beyond those contained within the PDF document and CD, we will create a webpage suitable for inclusion on the State's web site that can be easily maintained by agency staff. In addition to providing users with a wide variety of links and resource documents, the page will include interactive tools, such as self-assessment checklists.

Web-Based Seminar – The CS team will develop and conduct an online web-base seminar ("webinar") that will be packaged for subsequent distribution on the web and CD. The webinar will serve as a follow-up to the Summit proposed in Task 4.2, and will allow for broad dissemination and discussion of the final toolkit.

Products

The Cambridge Systematics team will provide the following contract deliverables through this research project:

- **Progress Reports –** Quarterly progress reports will be prepared and submitted.

- **Project Management Meetings –** A project kickoff meeting and up to four additional in-person interim meetings are anticipated during the course of the research. The meetings are suggested to be held in conjunction with interviews, other stakeholder outreach, and reviews of written deliverables to maximize value from the trips.

- **Task 1, Technical Memorandum –** A Technical Memorandum, in electronic format, will be provided to report information on the Montana context and tool examples from elsewhere. This memorandum is intended as a mechanism to report initial findings and suggestions so that informed decisions can be made regarding future research progress. The material in the memorandum is also intended for inclusion in the Final Report; therefore, comments provided on the initial Technical Memorandum will be addressed in the Final Report.

- **Task 2, Technical Memorandum –** A Technical Memorandum, in electronic format, will be provided to report information on the Montana context and tool examples from elsewhere. This memorandum is intended as a mechanism to report initial findings and suggestions so that informed decisions can be made regarding future research progress. The material in the memorandum is also intended for inclusion in the Final Report; therefore, comments provided on the initial Technical Memorandum will be addressed in the Final Report.

- **Task 3, Technical Memorandum –** A Technical Memorandum, in electronic format, will be provided to report information on the Montana context and tool examples from elsewhere. This memorandum is intended as a mechanism to report initial findings and suggestions so that informed decisions can be made regarding future research progress. The material in the memorandum is also intended for inclusion in the Final Report; therefore, comments provided on the initial Technical Memorandum will be addressed in the Final Report.

- **Task 4, Toolkit Mockups –** Pre-production mockups of potential toolkit elements will be prepared and reviewed with MDT at on of the project management meetings.

- **Task 4, Draft Research Problem Statements –** Based on the research gaps identified in Tasks 3 and 4, Research Problem Statements will be drafted for potential submittal by MDT to NCHRP or TCRP.

- **Task 5, Final Toolkit –** The multimedia toolkit will be finalized and produced by the team. Our proposal is to prepare and submit assembled toolkits for use and distribution by MDT. The budget assumes submittal of 200 toolkits at a unit cost of $17.50.

- **Task 5, Initial Toolkit Deployment –** The Cambridge Systematics team will lead development of content and presentation at the proposed transportation summit and "webinar."

- **Task 5, Project Report –** Draft and final versions of a Project Report will be provided in electronic format.

- **Task 5, Project Summary Report –** Draft and final versions of a Project Summary Report will be provided in electronic format.

- **Task 5, Final Presentation –** A final project management meeting will be held to present final research findings and recommendations. At MDT's discretion, this final presentation can be held either upon completion of the final reports, or earlier in order to gather comments of the draft final reports.

Implementation

The primary methods for communicating the research results will be the multimedia toolkit and web site, which will identify transferable policies, practices, analytic tools and other ideas and explain how then can be used (and useful) in Montana's growing communities. Research findings will be initially deployed through the transportation summit and web-based seminar ("webinar").

Application of the results will initially rest with MDT, most likely the Multimodal Planning Bureau within the Rail, Transit and Planning Division. Outside of MDT, the institutions and individuals who will ultimately take leadership in applying the research product include planners, agency managers, and elected officials in local jurisdictions. These are the key actors in local land use decisions. Other individuals such as members of the general public, legislators, and members of the business community could also have a role in the implementing results as their work with local officials to identify and implement land use and transportation decisions.

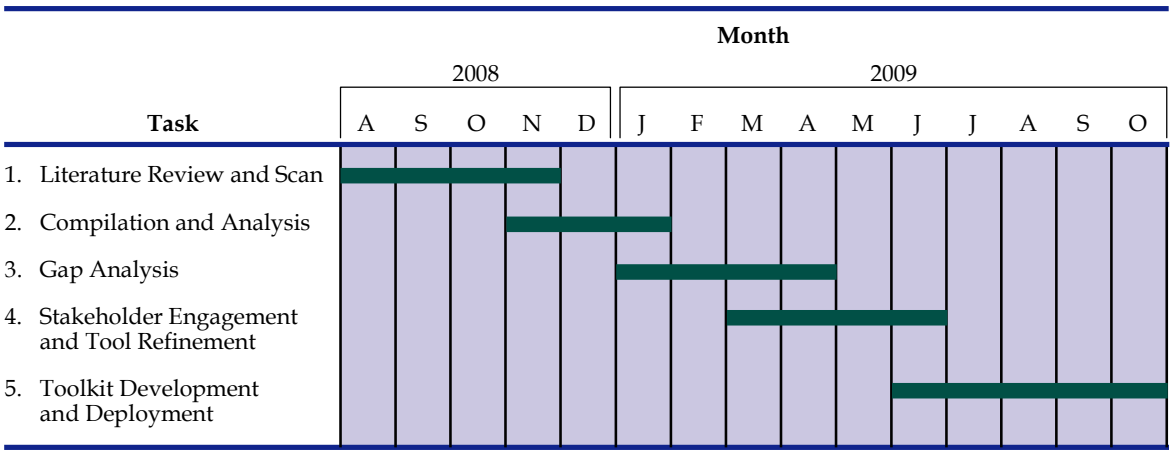
It is possible that the research findings could lead to longer-term changes in the process for identifying local assistance projects or in the stewardship agreement between MDT and its local transportation planning partners if they identify projects or policies that may

be at odds with current regulations or agreements. However, such conflicts are speculative and cannot be defined prior to initiation of the research effort.

Time Schedule

A schedule with the proposed timeframe for the completion of this research project is provided in Figure 4.2. Cambridge Systematics is proposing a 15-month schedule from Notice-to-Proceed (NTP), which is assumed to occur on August 1, 2008 for scheduling and budgeting purposes. The schedule assumes a one-month review period for the Technical Memoranda in Tasks 1, 2, and 3, and a two-month review period for the Draft Final Report and Draft Project Summary Report in Task 5.

Figure 4.2 Proposed Project Schedule



Staffing

Cambridge Systematics' management and staffing plan was detailed in Section 4.1.2, with an organization chart presented in Figure 4.1. As previously noted, resumés of key personnel are provided in Appendix C.

Table 4.1 details the proposed by task for each research team member to support this budget. The detailed cost proposal has been submitted separately as indicated in the RFP. The levels of efforts and identified personnel for the Project Manger, Principal-in-Charge, Deputy Project Manager, and functional area leaders (i.e., principal and professional members of the research team) will not be changed without the written consent of MDT.

Table 4.1 Staff Hours for Smart Transportation and Land Use Planning

Staff	Project Role	Literature Review and Scan	Compilation and Analysis	Gap Analysis	Stakeholder Engagement and Toll Refinement	Toolkit Development and Deployment	Total
Christopher Wornum	Principal-in-Charge	20	8	16	24	12	**80**
Tracy Clymer	Project Manager / Principal Investigator	72	48	60	80	80	**340**
Daniel Norderud	Deputy Project Manager	140	40	40	60	20	**300**
Christopher Porter	National Practices Review Leader	28	20	20	16	16	**100**
Abigail Rolon	Analyst	32	32	12	0	0	**76**
Jessica Wang	Analyst	60	80	40	60	40	**280**
Thomas Beraldi	Analyst	60	20	20	0	0	**100**
Regina Speir	Production	12	12	12	8	24	**68**
Scott Randall (RPA)	Analyst	84	60	40	16	4	**204**
Trisha Jensen (RPA)	Analyst	60	40	40	0	0	**140**
Hannah Twaddell (RPG)	Toolkit Development Leader	20	24	24	28	80	**176**
Vladimir Gavrilovic (RPG)	Analyst	0	0	0	4	8	**12**
Kristin Nelson (RPG)	Analyst	0	0	0	8	60	**68**
Jason Espie(RPG)	Analyst	40	0	0	0	120	**160**
David Ausherman (RPG)	Analyst	0	0	0	0	32	**32**
Amanda Taylor (RPG)	Analyst	40	0	0	40	132	**212**
Total		**668**	**384**	**324**	**344**	**628**	**2,348**

All members of the Cambridge Systematics team have the time, management, and staffing availability to commit to and successfully complete the MDT *Smart Transportation and Land Use Planning* project. While each of the proposed team members has a base of existing work consisting of a mix of project and management responsibilities, there are no current or anticipated commitments that would prevent them from fulfilling their assigned project responsibilities. Information on other time commitments for the proposed staff is contained in Table 4.2. The percentage availability figures are based on the anticipated August 2008 start date for this project.

Table 4.2 Staff Availability to Support the MDT Smart Transportation and Land Use Planning Project

Staff	Percentage of Time Committed to Other Projects	Percentage of Availability for MDT *Smart Transportation and Land Use Planning*
Christopher Wornum (CS)	80%	20%
Tracy Clymer (CS)	50%	50%
Daniel Norderud (RPA)	60%	40%
Christopher Porter (CS)	60%	40%
Abigail Rolon (CS)	40%	60%
Jessica Wang (CS)	40%	60%
Tom Beraldi (CS)	40%	60%
Regina Speir	20%	80%
Scott Randall (RPA)	40%	60%
Trisha Jensen (RPA)	40%	60%
Hannah Twaddell (RPG)	60%	40%
Vladimir Gavrilovic (RPG)	70%	30%
Kristin Nelson	60%	40%
Jason Espie	60%	40%
David Ausherman (RPG)	70%	30%
Amanda Taylor	60%	40%

Facilities

Our team's experienced personnel and their associated computer systems and professional libraries compose the primary resource needed to successfully carry out this effort. The proposed team members possess the equipment, facilities, and resources necessary to undertake the work proposed without the need of additional capital investment.

Cambridge Systematics, Inc. offices are located strategically in close proximity to major planning and transportation agencies and research institutions. The offices are fully equipped professional facilities with extensive computing, electronic communication, printing, word processing, conference, and electronic publication capabilities. The equipment and facilities supporting our work include professional libraries; conference facilities; advanced computer hardware and software; and comprehensive graphics, information technology, electronic publication, and multimedia services.

Specialized Software and Licenses

Cambridge Systematics uses dozens of standard software tools for specific applications. Available transportation analysis computer travel demand forecasting and modeling software packages include TP+/Cube/Voyager, EMME/2, TransCAD, QRS II, VISUM, TRANPLAN, MINUTP, and TMODEL. Available Geographic Information System (GIS) and mapping software includes ARC/INFO Version 8, ArcView 3, ArcCAD, TransCAD, MapInfo, GeoMedia, and AutoCAD. Air quality models available include MOBILE6, CAL3QHC, and CALINE4. We also maintain licenses for many statistical analysis software packages, including PC-SAS, ALOGIT, and SPSS.

Hardware and Software Expertise

Cambridge Systematics has worked with many organizations to implement a variety of systems-related projects. We bring to any project highly qualified technical staff using state-of-the-art equipment and application development tools in a multi-user client/server environment. Some of the tools used include Structured Query Language (SQL), Computer-Aided Dispatch (CAD), GIS, and various Local Area Network (LAN) technologies. A sample of applications developed by Cambridge Systematics include automation of capital planning processes, permitting processes, benefit/cost and financial analysis for infrastructure management, fixed-asset management, and data analysis and modeling for enhanced decision-making.

The high-quality, experienced personnel at Cambridge Systematics collectively have in-depth knowledge and experience with many computer platforms. Cambridge Systematics servers run Novell Netware, Windows 2000 and 2003 Server, and Red Hat and SuSE Linux. Our total on-line storage capacity is close to seven terabytes. Our workstations run Windows 2000 Professional and are Pentium 3s and Pentium 4s (around 250). We also have several G4 Macintosh computers running Mac OS X. We own multiple black and white and color laser printers and five color plotters.

Our messaging infrastructure utilizes a Lotus Domino/Notes network providing e-mail and group collaboration. We also develop and implement Domino applications to

support corporate- and project-related initiatives. We support remote access via iPass and VPN. Office LANs are 100/1,000Mb ethernet-switched networks. Our offices are connected via a corporate point-to-point WAN based on an MPLS/PNT private network with built-in path redundancy.

Graphics and Communication Capabilities

Cambridge Systematics maintains a full-capability word processing, graphics, web site design, desktop publishing, and report production department. In addition to document production, this department is able to undertake the creative design of documents, presentation and training materials, and computerized slide presentations. We also are able to produce promotional materials requested by our clients, including newsletters and brochures that summarize the findings of a completed project. These documents use the creative talents of our staff, and involve the use of computerized page layout programs, such as QuarkXPress, Adobe Photoshop, Adobe InDesign, Freehand, Adobe Illustrator, Macromedia Dreamweaver, Microsoft FrontPage, Flash, and Microsoft Office products. Our Marketing Department assists our Production Department in designing and developing newsletters, brochures, logos, cover treatments, and other aspects of communications design.

In addition, the Production Department has the expertise and capability to convert publications to a Section 508 compliant web documents. The Department is able to undertake this task through extensive knowledge of the Section 508 requirements and HTML coding.

Cambridge Systematics regularly produces a variety of different communication materials, including executive summaries, presentations, advertisements, brochures, and press releases. For each item, Cambridge Systematics staff selects the best medium to achieve the appropriate outcome or response from the selected audience, and the appropriate mix of visual and text material.

MDT Involvement

Assistance of MDT staff will be requested throughout the research project for several key support activities:

- **State and Local Planning Documents –** The MDT project manager will be asked to review a list of planning documents proposed for review in Task 1, and to recommend any additional documents particularly from state-level agencies. This assistance will be requested prior to completion of document review.

- **Local Transportation and Land Use Officials –** The MDT project manager will be asked to review, refine and approve a list of local Montana transportation and land use professionals to be interviewed in Task 1, and to provide contact information if available.

- **Tool Refinement –** The CS team will work directly with MDT staff in developing, refining and finalizing the toolkit elements.

- **Stakeholders –** The MDT project manager will be asked to review, refine and approve a list of stakeholders to be interviewed in Task 4, and to provide contact information if available.

- **Toolkit Deployment –** The CS team will work with the MDT project manager to identify potential participants for the summit and webinar proposed for Task 5, identify a suitable MDT facility (or equivalent) for the summit, and assemble contact information for participants (if available).

Section 5. Cost Proposal

The cost proposal for the MDT Smart Transportation and Land Use Planning project has been submitted separately, as required on Section 5 of the RFP. Cambridge Systematics has complied with the specifications outlined in the RFP for the development of the cost proposal.

5.0 Cost Submittal

Cambridge Systematics, Inc., understands and will comply.

5.1 Cost Schedule

Cambridge Systematics, Inc., understands and will comply.

5.2 Project Budget

Cambridge Systematics, Inc., understands and will comply.

5.3 Cost Revisions

Cambridge Systematics, Inc., understands and will comply.

5.4 Federal Acquisition Regulation (FAR). Payment for Services

Cambridge Systematics, Inc., understands and will comply.

5.4.1 General

Cambridge Systematics, Inc., understands and will comply.

5.4.2 Indirect Cost Rate

☒ Contractor chooses that its indirect cost rate will remain fixed to the date stated in Section 2.0 of the contract. In the event of an extension beyond the date stated in Section 2.0 of the contract, the Contractor will provide new FAR-audited rate as of the original completion date.

☐ Contractor chooses that its indirect cost rate will be audited annually, and Contractor will comply with the procedure stated below.

Cambridge Systematics, Inc., understands and will comply.

5.4.3 Annual Audit

Cambridge Systematics, Inc., understands and will comply.

Section 6. Evaluation Criteria

6.0 Evaluation Criteria

Cambridge Systematics, Inc. understands and will comply.

Appendix A

Standard Terms and Conditions

Appendix A. Standard Terms and Conditions

Cambridge Systematics, Inc., understands and will comply.

Appendix B

Contract

Appendix B. Contract

B.1 Parties

Cambridge Systematics, Inc. understands and will comply.

B.2 Effective Date, Duration, and Renewal

B.2.1 Contract Term

Cambridge Systematics, Inc. understands and will comply.

B.3 Services and/or Supplies

Cambridge Systematics, Inc. understands and will comply.

B.3.1 Coordination of Agreement Documents

Cambridge Systematics, Inc. understands and will comply.

B.3.2 Ownership

Cambridge Systematics, Inc. understands and will comply.

B.3.3 Reports

Cambridge Systematics, Inc. understands and will comply.

B.3.4 Supplies, Equipment, and Instrumentation

Cambridge Systematics, Inc. understands and will comply.

■ B.4 Consideration/Payment

B.4.1 Payment Schedule

Cambridge Systematics, Inc. understands and will comply.

B.4.2 Withholding of Payment

Cambridge Systematics, Inc. understands and will comply.

B.4.3 Federal Acquisition Regulation (FAR) – Payment Services

Cambridge Systematics, Inc. understands and will comply.

B.4.3.1 General

Cambridge Systematics, Inc., understands and will comply.

B.4.3.2 Indirect Cost Rate

Cambridge Systematics, Inc. understands and will comply.

☒ Contractor chooses that its indirect cost rate will remain fixed to the date stated in Section 2.0 of the contract. In the event of an extension beyond the date stated in Section 2.0 of the contract, the Contractor will provide new FAR-audited rate as of the original completion date.

☐ Contractor chooses that its indirect cost rate will be audited annually, and Contractor will comply with the procedure stated below.

B.4.3.3 Annual Audit

Cambridge Systematics, Inc., understands and will comply.

B.5 Access and Retention of Records

Cambridge Systematics, Inc. understands and will comply.

B.5.1 Access to Records

Cambridge Systematics, Inc. understands and will comply.

B.5.2 Retention Period

Cambridge Systematics, Inc. understands and will comply.

B.6 Assignment, Transfer, and Subcontracting

Cambridge Systematics, Inc. understands and will comply.

B.7 Hold Harmless/Indemnification

Cambridge Systematics, Inc. understands and will comply.

B.8 Required Insurance

Cambridge Systematics, Inc. understands and will comply.

B.8.1 General Requirements

Cambridge Systematics, Inc. understands and will comply.

B.8.2 Primary Insurance

Cambridge Systematics, Inc. understands and will comply.

B.8.3 Specific Requirements for Commercial General Liability

Cambridge Systematics, Inc. understands and will comply.

B.8.4 Additional Insured Status

Cambridge Systematics, Inc. understands and will comply.

B.8.5 Specific Requirements for Automobile Liability

Cambridge Systematics, Inc. understands and will comply.

B.8.6 Additional Insured Status

Cambridge Systematics, Inc. understands and will comply.

B.8.7 Specific Requirements for Professional Liability

Cambridge Systematics, Inc. understands and will comply.

B.8.8 Deductible and Self-Insured Retentions

Cambridge Systematics, Inc. understands and will comply.

B.8.9 Certificate of Insurance/Endorsement

Cambridge Systematics, Inc. understands and will comply.

■ B.9 Compliance with Worker's Compensation Act

Cambridge Systematics, Inc. understands and will comply.

B.10 Independent Contractor

Cambridge Systematics, Inc. understands and will comply.

B.11 Compliance with Laws

Cambridge Systematics, Inc. understands and will comply.

B.12 Nondiscrimination Notice

Cambridge Systematics, Inc. understands and will comply.

B.12.A Compliance with Title VI of the Civil Rights Act of 1964 for Federal-Aid Contracts

Cambridge Systematics, Inc. understands and will comply.

- B.12.A.1. – Cambridge Systematics, Inc. understands and will comply.
- B.12.A.2. – Cambridge Systematics, Inc. understands and will comply.
- B.12.A.3. – Cambridge Systematics, Inc. understands and will comply.
- B.12.A.4. – Cambridge Systematics, Inc. understands and will comply.
- B.12.A.5. – Cambridge Systematics, Inc. understands and will comply.
- B.12.A.6. – Cambridge Systematics, Inc. understands and will comply.

B.12.B Compliance with the Montana Governmental Code of Fair Practices, Sec. 49-3-207, MCA

Cambridge Systematics, Inc. understands and will comply.

B.12.C Compliance with Americans with Disabilities Act (ADA)

Cambridge Systematics, Inc. understands and will comply.

- B.12.C.1. – Cambridge Systematics, Inc. understands and will comply.

- B.12.C.2. – Cambridge Systematics, Inc. understands and will comply.
- B.12.C.3. – Cambridge Systematics, Inc. understands and will comply.

B.12.D Compliance with Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs, 49 CFR Part 26

Cambridge Systematics, Inc. understands and will comply.

B.13 Federal Aid Requirements

Cambridge Systematics, Inc. understands and will comply.

B.13.1 Montana Preferences

Cambridge Systematics, Inc. understands and will comply.

B.13.2 False Statements Concerning Highway Projects

Cambridge Systematics, Inc. understands and will comply.

B.13.3 Notice To all Personnel Engaged On Federal –Aid Highway Projects.

Cambridge Systematics, Inc. understands and will comply.

B.13.4 Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion.

Cambridge Systematics, Inc. understands and will comply.

B.13.4.1 Instructions for Certification

Cambridge Systematics, Inc. understands and will comply.

- B.13.4.1.1 – Cambridge Systematics, Inc. understands and will comply.
- B.13.4.1.2 – Cambridge Systematics, Inc. understands and will comply.

- B.13.4.1.3 – Cambridge Systematics, Inc. understands and will comply.
- B.13.4.1.4 – Cambridge Systematics, Inc. understands and will comply.
- B.13.4.1.5 – Cambridge Systematics, Inc. understands and will comply.
- B.13.4.1.6 – Cambridge Systematics, Inc. understands and will comply.
- B.13.4.1.7 – Cambridge Systematics, Inc. understands and will comply.
- B.13.4.1.8 – Cambridge Systematics, Inc. understands and will comply.
- B.13.4.1.9 – Cambridge Systematics, Inc. understands and will comply.
- B.13.4.1.10 – Cambridge Systematics, Inc. understands and will comply.

B.13.5 Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion – Primary Covered Transactions.

Cambridge Systematics, Inc. understands and will comply.

B.13.5.1 The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

Cambridge Systematics, Inc. understands and will comply.

- B.13.5.1.1 – Cambridge Systematics, Inc. understands and will comply.
- B.13.5.1.2 – Cambridge Systematics, Inc. understands and will comply.
- B.13.5.1.3 – Cambridge Systematics, Inc. understands and will comply.
- B.13.5.1.4 – Cambridge Systematics, Inc. understands and will comply.

B.13.5.2 Where the prospective primary participant is unable to certify to any of the statements in this certification, such perspective participant shall attach an explanation to this proposal.

Cambridge Systematics, Inc. understands and will comply.

B.13.6 Instructions for Certification – Lower Tier Covered Transaction.

Cambridge Systematics, Inc. understands and will comply.

B.13.6.1 – Cambridge Systematics, Inc. understands and will comply.

B.13.6.2 – Cambridge Systematics, Inc. understands and will comply.

B.13.6.3 – Cambridge Systematics, Inc. understands and will comply.

B.13.6.4 – Cambridge Systematics, Inc. understands and will comply.

B.13.6.5 – Cambridge Systematics, Inc. understands and will comply.

B.13.6.6 – Cambridge Systematics, Inc. understands and will comply.

B.13.6.7 – Cambridge Systematics, Inc. understands and will comply.

B.13.6.8 – Cambridge Systematics, Inc. understands and will comply.

B.13.6.9 – Cambridge Systematics, Inc. understands and will comply.

B.13.7 Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions.

Cambridge Systematics, Inc. understands and will comply.

B.13.7.1 – Cambridge Systematics, Inc. understands and will comply.

B.13.7.2 – Cambridge Systematics, Inc. understands and will comply.

B.13.8 Certification Regarding Use of Contract Funds for Lobbying.

Cambridge Systematics, Inc. understands and will comply.

B.13.8.1 – Cambridge Systematics, Inc. understands and will comply.

- B.13.8.1.1 – Cambridge Systematics, Inc. understands and will comply.
- B.13.8.1.2 – Cambridge Systematics, Inc. understands and will comply.

B.13.8.2 – Cambridge Systematics, Inc. understands and will comply.

B.13.8.3 – Cambridge Systematics, Inc. understands and will comply.

■ B.14 Intellectual Property

Cambridge Systematics, Inc. understands and will comply.

■ B.15 Patent and Copyright Protection

B.15.1 Third-Party Claim

Cambridge Systematics, Inc. understands and will comply.

B.15.2 Product Subject of Claim

Cambridge Systematics, Inc. understands and will comply.

■ B.16 Contract Termination

B.16.1 Termination for Cause with Notice to Cure Requirement

Cambridge Systematics, Inc. understands and will comply.

B.16.2 Reduction of Funding

Cambridge Systematics, Inc. understands and will comply.

B.16.3 Federal Labor Laws

Cambridge Systematics, Inc. understands and will comply.

B.17 Liaison and Services Notices

Cambridge Systematics, Inc. understands and will comply.

B.18 Meetings

Cambridge Systematics, Inc. understands and will comply.

B.19 Contractor Performance Assessments

Cambridge Systematics, Inc. understands and will comply.

B.20 Transition Assistance

Cambridge Systematics, Inc. understands and will comply.

B.21 Choice of Law and Venue

Cambridge Systematics, Inc. understands and will comply.

B.22 Scope, Amendment, and Interpretation

Cambridge Systematics, Inc. understands and will comply.

B.22.1 Contract

Cambridge Systematics, Inc. understands and will comply.

B.22.2 Entire Agreement

Cambridge Systematics, Inc. understands and will comply.

■ B.23 Execution

Cambridge Systematics, Inc. understands and will comply.

Appendix C

Resumés

Christopher Wornum

Principal
Cambridge Systematics, Inc.

Education

M.S., Management Science, Sloan School of Management, Massachusetts Institute of Technology, 1986
M.S., Urban Planning, Massachusetts Institute of Technology, 1986
B.S., Political Economics, University of California, Berkeley, 1983

Areas of Expertise

Financial Analysis
Fiscal Analysis
Urban and Land Use Planning
Urban Public Policy and Finance

Professional Experience

Understanding Housing Choice. For the Metropolitan Transportation Commission, Mr. Wornum is leading a team to understand the reasons why people choose to reside in transit-oriented developments (TOD) in the San Francisco Bay Area. He is using a cutting-edge market research approach to segment the market into customer types based on peoples' attitudes and preferences with regard to housing. His team is conducting attitudinal surveys to determine which customer types are the most likely to consider residing in a TOD, what key features are needed to attract them, and public policy changes are needed to attract potential TOD residents.

Montana Highway Reconfiguration Study. Mr. Wornum was the project manager for a team of consultants working with the Montana Department of Transportation (MDT) to develop the Highway Economic Analysis Tool (HEAT) that MDT is now using in-house on an ongoing basis to evaluate the economic development potential of any project submitted to MDT for state funding. The tool incorporates county level commodity flow data, an extensive GIS-based transportation infrastructure database, business data, and detailed industry profiles for all existing and emerging Montana industries. The tool also incorporates sophisticated economic analysis software, travel demand forecasting, and commodity flow forecasting.

Infrastructure Finance. Mr. Wornum has designed over two-dozen funding programs throughout that include countywide impact fees that are the first of their kind in the State. In his work for seven California counties, he evaluated alternative funding sources available for expanding regional facilities, including

Christopher Wornum
Principal

water supply, sewage treatment, energy, solid waste, public health, toxic and hazardous waste, social services, justice services and jails, regional parks and open space, animal control, libraries, and regional transportation. For many of these clients, he also analyzed the incidence of alternative funding methods on housing costs, land values, and real estate prices in adjacent counties.

FiscPac Fiscal Impact Model. While he was a Senior Associate or consultant for the Hausrath Economics Group, Mr. Wornum designed and oversaw the development of a computerized fiscal impact model (FiscPac) that allows cities, counties, special districts, and developers to negotiate the allocation of revenues, estimate the levels of service, and refine the land use mix of proposed development. The FiscPac software package, written for Windows in C++, enables users to conduct sensitivity analysis using a standard methodology and consistent underlying economic assumptions.

City and Countywide General Plans. While he was a Senior Associate or consultant for the Hausrath Economics Group, Mr. Wornum worked with a dozen of the fastest growing cities throughout California on a major updates to their general plans. He worked with city staff, environmental experts, and general plan consultants to evaluate alternative land use options. He analyzed how each land use option could help resolve long-standing problems, such as economic development, overextended infrastructure, and jobs/housing balance. He analyzed fiscal impacts and economic development potential of the alternative land use scenarios. He evaluated alternative methods of funding additional infrastructure. He also completed economic development plans that assessed the most cost-effective investments to retain existing employers, attract new industries, and encourage expanded retail development. He has worked with cities and counties on growth strategies that would restrict development, control sprawl, and foster economic and fiscal health.

Albuquerque Transportation Evaluation Study. For the city of Albuquerque, New Mexico, Mr. Wornum analyzed the potential future land use, transportation, and air quality conditions of the region if current policies and plans continue in a similar direction. Mr. Wornum identified and analyzed fiscal and public finance strategies and policies that could be implemented to improve the land use, transportation, and air quality connection within the region.

Associate Faculty at the Lincoln Institute for Land Policy. Mr. Wornum has been an associate faculty member at the Lincoln Institute of Land Policy in Cambridge, Massachusetts. He has taught two courses in Cambridge and Chicago, and presented a lecture in Santiago (Chile) on the application of innovative financing methods for funding regional and local infrastructure.

Faculty at the University of California Extension. Mr. Wornum has been on the faculty at the University of California Extension program for five years, where he taught courses on funding local and regional infrastructure, use of value capture, and the interplay between economics and land use law.

Tracy L. Clymer

Associate
Cambridge Systematics, Inc.

Education

M.S., Transportation Systems Engineering, Georgia Institute of Technology, 2002
B.S., Atmospheric Chemistry, Georgia Institute of Technology, 1997

Areas of Expertise

Regional and Statewide Transportation Planning
Travel Demand Modeling and Application
Performance Measurement
Air Quality Analysis and Planning

Professional Experience

Greater Bozeman Area Transportation Plan Update. Ms. Clymer, as project manager, is providing review of travel demand modeling completed for the Bozeman, Montana Transportation Plan Update; providing oversight on travel model calibration and input into developing model alternative test runs for transportation scenario analysis.

Georgia DOT Project Prioritization Process. For the Georgia DOT, Ms. Clymer is assisting in the design and implementation process to consistently evaluate and prioritize projects within the DOT's statewide transportation plans. This effort will include a review of current evaluation and prioritization processes; refining the technical evaluation of projects to include more comprehensive measures of performance such as land use and economic impact; applying the above processes to currently identified projects; and providing Georgia DOT with a process for fully automating quantitative elements of project evaluation.

Effective Transportation Development and Delivery Alignment for Texas. On behalf of the Texas DOT, CS is conducting research on the geographic alignment and the relationships of organizations involved with the delivery of transportation planning services in Texas. The goal of the research is to identify potential opportunities to improve regional transportation planning, financing, project development, and operational services in Texas.

SHRP II, CO2 Systems Based Performance Measurement Framework for Highway Capacity Decision-making. For the Transportation Research Board's State Highway Research Program, Ms. Clymer is assisting to study the processes used by transportation agencies to identify and prioritize potential

Tracy L. Clymer
(continued)

highway capacity expansion projects, and develop a framework to support implementation of more comprehensive and nontraditional performance metrics through project review and development.

NCHRP 8-70 Target Methods. For the NCHRP, Ms. Clymer is assisting in an effort to prepare a guide for transportation agencies to establish and apply performance-based resource allocation decision-making. This guide will focus on target-setting methodologies as well as data management and stewardship. Best-practice case studies of both public and private sector organizations that use performance-based resource allocation are being provided, together with examples to illustrate methods for presenting performance information to decision-makers and other stakeholders.

Atlanta Regional Commission. Prior to joining Cambridge Systematics, Ms. Clymer was a Senior Principal Planner and Program Manager for Model Applications and Analysis within the Transportation Planning Division of the Atlanta Regional Commission (ARC). In this role, she was responsible for providing long-range transportation planning support and managing the transportation air quality conformity process for the Atlanta nonattainment area. Amongst her achievements, Ms. Clymer successfully led the ARC effort to implement the Governor's Congestion Mitigation Task Force recommendation to evaluate transportation projects with a significantly increased weighting for congestion reduction. This work involved developing new technical tools and planning procedures to support quantitative evaluation of projects to include an assessment of congestion mitigation, environment impact, and support for regional land use policies.

■ Selected Publications and Papers

Travel Demand Modeling and Conformity Determination: the Atlanta Regional Commission Case Study, paper presented (published) at the TRB Application of Transportation Planning Methods Conference, April, 2001.

Implementing Strategies to Control $PM_{2.5}$ and Ozone, presented at the 85th Transportation Research Board (TRB) Annual Meeting, January, 2006.

Implementing New Air Quality Standards – An MPO Perspective, presented at the 83rd TRB Annual Meeting, January, 2004.

■ Professional Affiliations

TRB, Transportation and Air Quality Committee Member
TRB, Transportation Planning Applications, Friend of the Committee
Association of Metropolitan Planning Organizations (AMPO),
Air Quality Subcommittee; Committee Chair Jan. 2006-April 2007
AMPO Technical Committee Member Jan. 2006-April 2007

Thomas F. Beraldi, Jr.

Transportation Analyst
Cambridge Systematics, Inc.

Education

M.A., Urban and Environmental Policy and Planning, Tufts University, 2006
B.A., Political Science, Florida State University, 2004
B.A., Spanish, Florida State University, 2004

Areas of Expertise

Regional and Urban Transportation Planning
Economic Analysis
Environmental Analysis

Professional Experience

NYCEDC Planning – Cost of Congestion. For the New York City Economic Development Corporation (NYCEDC), Cambridge Systematics is providing on-call transportation planning, policy, and environmental services. As part of this effort, Mr. Beraldi is assisting in examining the transportation and economic costs of congestion in the metropolitan New York area. This assessment includes two phases. The first phase uses the metropolitan area's travel demand model to estimate congestion (vehicle hours of delay) today and in 2030 and converts estimates of travel delay into costs by trip purpose – commuters, business activity, taxis, personal/tourism, etc. The second phase evaluates the effect of proposed transportation improvement projects on congestion and considers a broader array of impacts. These additional areas of study include impacts to transit, reliability of travel times, and industry-specific effects of congestion.

Enterprise Florida Rural Economic Development Catalyst. For Enterprise Florida, Mr. Beraldi is participating in a bold, new strategic marketing initiative to increase economic opportunities in Florida's three designated Rural Areas of Critical Economic Concern (RACEC). Cambridge Systematics is leading an effort to identify target industries as part of a broader strategy that also includes the identification of potential sites, prospective companies to occupy the sites, and a revenue sharing strategy. He is assisting in an intensive data-driven analysis of potential growth industries, which is further supported by case studies of successful rural development strategies in other parts of the country; and will assist in validating potential targets through interviews with local stakeholders and industry experts. The results of the work will be presented to each RACEC region and documented in a report.

Thomas F. Beraldi, Jr.
(continued)

Metra New Start LPA Document Development. Mr. Beraldi is assisting in preparing New Starts submittal information for four commuter rail corridors in Chicago that currently are being operated by or are planned by Metra. The New Starts documentation is being prepared to meet the requirements of the Federal Transit Administration (FTA) for New Starts projects. The projects under study include an array of service improvements on two existing rail corridors as well as the introduction of commuter rail service or enhanced transit service in two new corridors. The methodology used builds upon the same data sources, utilizes the same set of input assumptions, uses the same modeling platform, and produces the same set of performance measures for each of the four corridors. This approach ensures both the consistency of the methodology with the criteria for New Starts and the comparability of the analysis outcomes across the four corridors.

I-95 Corridor Coalition MATOps Study. For the I-95 Corridor Coalition, Cambridge Systematics is part of a team participating in the Mid-Atlantic Truck Operations (MATOps) Study. Mr. Beraldi is assisting in this effort, which involves identifying and analyzing key chokepoints affecting the Mid-Atlantic Region's highway system and developing a consensus-based approach for addressing them.

Florida DOT Intergovernmental SIS Plan/2025 FTP Implementation. For the Florida Department of Transportation (DOT), Cambridge Systematics is providing support to the DOT and its partners in implementing the Strategic Intermodal System (SIS) Plan and the 2025 Florida Transportation Plan (FTP). Mr. Beraldi is providing support by assisting in developing an overall intergovernmental coordination plan; preparing targeted briefings to explain the SIS and the 2025 FTP to partners and ask for their support in implementing key provisions of each plan; and preparing periodic status reports to identify progress toward the implementation of these plans.

Rhode Island Five-Year SHSP. Cambridge Systematics is working with the Rhode Island DOT and other state agencies to develop a statewide-coordinated Strategic Highway Safety Plan (SHSP) that provides a comprehensive framework and specific goals and objectives for reducing highway fatalities and serious injuries on all public roads. As part of this effort, Mr. Beraldi is coordinating data collection and analysis on highway fatalities and serious injuries in each of the State's identified emphasis areas.

■ Professional Affiliations

American Planning Association, Member

Christopher D. Porter

Senior Associate
Cambridge Systematics, Inc.

Education

M.S., Transportation, University of California at Berkeley, 1995
M.C.P., City Planning, University of California at Berkeley, 1995
B.C.E., Civil Engineering, University of Minnesota, 1993

Areas of Expertise

Transportation and Land Use
Air Quality and Greenhouse Gas Analysis
Economic Analysis
Non-motorized Travel

Professional Experience

NHI Transportation and Land Use Course Development. For the FHWA's National Highway Institute (NHI), Mr. Porter led the development of a three-day training course entitled *Transportation and Land Use*. The goal of this course is to help practitioners develop a multimodal transportation system that supports desired land uses and to shape land uses to support the transportation system. Course participants are introduced to practical coordination strategies at all levels, including regional planning, corridor planning, project development, streetscape design, and transit-oriented development.

Heartland 2060 Vision. Through a support contract with the Florida DOT, Mr. Porter is assisting the Central Florida Regional Planning Commission in developing a 50-year regional vision for the seven-county Heartland region south of Orlando. The vision is addressing coordination of transportation and land use as well as economic development, environmental, and community issues. Mr. Porter is helping to develop the overall process for the visioning effort, facilitate leadership and stakeholder meetings, and identify appropriate technical tools.

Vermont Corridor Management Handbook and Western Transportation Corridor Management Study. For the Vermont Agency of Transportation, Mr. Porter coauthored a corridor management handbook. The objective of the handbook is to provide broad direction and guidance to state, regional, and local planners and officials in developing comprehensive corridor management plans addressing transportation and land-use issues along a specific corridor. He is currently leading the economic development and freight analysis component of a study that is applying the handbook's practices to the Western Transportation Corridor from Bennington, VT to the Canadian border.

Christopher D. Porter
(continued)

NCHRP 8-36A National Site Visits on Transportation and Growth. Mr. Porter was principal investigator of NCHRP Project 8-36, Task 40, the objective of which was to conduct site visits on examples of transportation and land use planning integration by state and regional transportation agencies. Mr. Porter was responsible for identifying site visit locations, planning the tour, organizing meetings with State, regional, and local agency staff and other stakeholders, helping to lead the tour and discussions, and documenting the tour.

Tools, Techniques, and Methods for Rural Transportation Planning. Mr. Porter assisted with the NCHRP Project 8-36A, Task 32 to develop a toolbox and case studies of methods for rural transportation planning. A wide range of planning tools and methods are covered, including asset management, data collection, traffic forecasting, design standards, access management, interjurisdictional relationships, needs assessment, project selection, public involvement, and funding mechanisms.

Fairfax County TDM Policy. For Fairfax County (VA), Mr. Porter is leading a study into how travel demand management (TDM) techniques can increase the effectiveness and efficiency of obtaining proper commitments from developers. The study's activities include researching best practices in other jurisdictions; relating trip generation to the built environment and transit access; researching and recommending parking management strategies to support transit and reduce travel demand; developing a framework for setting trip reduction targets; and preparing a TDM program manual for new developments.

Transportation and Community and System Preservation (TCSP) Pilot Program Support and Evaluation. For the Federal Highway Administration, Mr. Porter provided evaluation assistance to the TEA-21 established TCSP Pilot Program. Through case studies and program reports, Mr. Porter documented examples of successful projects led by MPOs, state DOTs, and local governments in which transportation investments, land use policies, zoning regulations, and design practices were revised to better integrate transportation and land development with environmental and community preservation concerns.

■ Professional Affiliations

Institute of Transportation Engineers, Member

■ Selected Publications and Papers

These Agencies Get It: When it Comes to Integrating Transportation and Land use, the Winners are… Planning Magazine, American Planning Association, May 2005.

Abigail Rolon

Transportation Analyst
Cambridge Systematics, Inc.

Education

M.A., Urban Planning, University of California at Los Angeles, 2005
B.A., Economics, Center of Economic Research, Mexico, 1998

Areas of Expertise

Economic Analysis
Benefit/Cost Analysis

Professional Experience

Texas Statewide Freight Rail Mobility Study. For Texas Department of Transportation (DOT), Ms. Rolon is developing a forecast of statewide freight rail traffic volumes, commodities, and tonnage forecasts to 2030. This effort entails a review and evaluation of existing freight rail forecasts (which run to 2025); identification of existing and emerging trade, industry, border crossing, port, and railroad trends impacting future volumes and traffic patterns into, out of, through, and within the State; and collection and syntheses of data and information to develop new forecasts to 2030.

Arizona DOT On-Call – Southeast Regional Transportation Profile. For the Arizona DOT, Ms. Rolon collaborated in developing a Regional Transportation Profile (RTP) for the Southeast area of Arizona. Ms. Rolon's responsibilities included conducting research on the security measures implemented in the Ports of Entry; estimating bridge preservation and improvement needs using the National Bridge Investment Analysis System (NBIAS); and estimating the benefits resulting from potential highway improvements using Highway Economics Requirements System (HERS) software.

California High-Speed Rail Draft Program EIR/EIS. For the California High-Speed Rail (HSR) Authority, Ms. Rolon collaborated in assessing the economic benefits, such as pollution reduction, time savings, and accident reductions derived from the construction of the HSR under different alternatives.

UCLA North American Integration and Development Center. Prior to joining Cambridge Systematics, Ms. Rolon served as a Research Assistant for the North American Integration and Development Center (NAID Center) at UCLA, where she synthesized environmental impact methods applicable to observed

Abigail Rolon
(continued)

behavior; undertook statistic and econometric analysis; created maps for several topics, including land uses, economic activity, and labor force; and collaborated on the research of the impact of the North American Free Trade Agreement (NAFTA) on the agricultural and manufacturing sectors in the United States.

National Bank of Public Works and Services. Ms. Rolon served as a Project Evaluator for the National Bank of Public Works and Services (BANORAS) in Mexico City, where she undertook benefit/cost analysis of infrastructure projects; designed surveys for project evaluations; and coordinated project evaluations with government agencies. She also created final reports of project evaluations and presented project assessments to local government.

Ms. Rolon also previously served as an Economic Analyst for BANORAS. Her responsibilities included forecasting macroeconomic variables; creating weekly economic reports about the performance of the national and international economies; and collaborating on the research of a variety of topics, including regional inequality, credit programs for basic infrastructure, and assessment of the social rate of discount.

Mexico Central Bank. Ms. Rolon served as a Research Assistant for the Mexico Central Bank's Department of Analysis and Evaluation of the Finance Sector. Her responsibilities included data analysis and bibliographic research and collaboration on the research for the document titled *Financial Conglomerates: The International Experience*.

Jessica Wang

Transportation Analyst
Cambridge Systematics, Inc.

Education

M.S., Civil Engineering, University of California at Berkeley, 2004
B.S., Industrial Engineering, Northwestern University, 2003

Areas of Expertise

Transportation Planning and Engineering
Corridor Analysis
Economic and Financial Analysis

Professional Experience

Montana DOT Transportation Planning Assistance – SAFETEA-LU Amendment. For the Montana Department of Transportation (DOT), Cambridge Systematics amended the latest statewide long-range transportation plan (TRANPLAN 21) to be compliant with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) planning requirements. A detailed review and analysis of SAFETEA-LU planning provisions and TRANPLAN 21 was conducted to identify necessary amendments. Ms. Wang led efforts to address identified elements including the consistency of transportation plans in planned growth and economic development; new consultations (land use, tribal, environmental); environmental mitigation; capital, operations, and management and investment strategies; transportation system security; visualization techniques; strategic highway safety planning; and consistency with metropolitan planning organization (MPO) plans.

MTC Understanding Local Land-Use Decisions on Goods Movement Cost and Efficiency in the Bay Area. For the Metropolitan Transportation Commission (MTC), Cambridge Systematics, as part of a team, is assisting the MTC in furthering the region's understanding of goods movement/land use issues and implications. This project will identify the extent of economic, transportation, and environmental impacts that could result as the demand for goods movement services grows in the central parts of the MTC region. It will also identify the major locations for goods movement usage in the central areas, and examined how land use policy focused on central locations along major transportation corridors might be used to further the regional Smart Growth vision. Ms. Wang is assisting with the identification and projection of key goods movement drivers such as employment, economic conditions, and changes in land

Jessica Wang
(continued)

use. These projections will then be used to assess the economic, transportation, and environmental impacts of changes in land use and transportation demand in the corridor.

BTCC Bozeman Transportation Plan. For the Bozeman Transportation Coordinating Committee (BTCC), Cambridge Systematics, as part of a team, provided general oversight to the development and application of the Greater Bozeman Area Travel Demand Model, including assessing the adequacy of a base-year model calibration conducted by the Montana Department of Transportation (DOT). Activities include identifying transportation needs and potential investment strategies, and suggesting socioeconomic and network attributes for future year model runs. Ms. Wang assisted with the model calibration review.

Idaho TD Update Cost Tables for HERS-ST. For the Idaho Transportation Department, Cambridge Systematics assisted in updating the cost tables used in the Highway Economic Requirements System – State Version (HERS-ST) model to reflect local costs. Ms. Wang led technical efforts to review Idaho's cost databases and national cost trends to develop a set of costs that reflect realistic cost estimates for use in the HERS-ST model.

Trans-Texas Corridor Application of the Ports to Plains Corridor Study. For the Texas Department of Transportation (DOT), Government Business Enterprise (GBE) Division, Cambridge Systematics prepared a case study of potential innovative financing and tolling strategies applicable to the Ports to Plains Corridor in Texas. Ms. Wang helped interview stakeholders, develop evaluation criteria, and determine the feasibility of innovative financing and tolling strategies to support infrastructure development in the Federally designated corridor.

Fehr & Peers Associates. Prior to joining Cambridge Systematics, Ms. Wang served as a Transportation Engineer at Fehr & Peers Associates where she worked on traffic impact studies, environmental impact reports, and campus planning studies for developments in the San Francisco Bay Area. Her responsibilities included conducting the traffic analysis, reporting the findings, and working with the client and jurisdiction to develop potential mitigation measures.

■ Computer Skills

Transportation Software – Synchro, SimTraffic, Viper, Cube, TP+, TransCAD

Keith A. Jensen, P.E.

Resume

President

Specialties

- Project Management
- Value Engineering
- Cost-Estimating and Budgeting
- Quality Assurance/Quality Control

Experience

Since joining Robert Peccia and Associates in 1983, Mr. Jensen has been involved in the engineering analysis and design of subdivisions, wastewater systems, highways and streets, parking lots, airports, and water and storm drainage systems. His specific capabilities include wastewater collection, urban and rural storm drainage hydrology, storm hydrographs and hyetographs, hydraulic design and analysis, subsurface drainage systems, pavement design for airports and highways, stabilization fabric applications, asphalt materials, sizing of storm drainage retention facilities, piping network analysis and design, and wetlands design.

As he is well versed in all civil engineering disciplines, Mr. Jensen serves as the Quality Assurance/Quality Control (QA/QC) Administrator for our firm. He is responsible for developing, implementing, and administering Robert Peccia and Associates' interoffice QA/QC program. He has knowledge of every project in every department because of his role in QA/QC. This includes all work in every division.

Mr. Jensen is an exceptional writer and preparer of environmental documents, feasibility studies, and master plans, and has been personally responsible for several planning studies. The listings below are some brief examples of his project management experience.

- Beaverhead Ranch Wetlands, Dillon, MT.
- Lewistown Water System Improvements, Lewistown, MT.
- Trout Hatcheries including Washoe Park Trout Hatchery, Anaconda, MT. and Bluewater Hatchery, Bridger, MT.
- U.S. Forest Service Bridge Sites Hydrologic Analysis & Surveys, Kootenai National Forest
- City of Helena Davis Gulch Storm Drainage Analysis and Harris Street Detention Basin, Helena, MT.
- University of Montana Parking Structure, Missoula, MT.
- Over twenty Montana airport projects including Dillon, Ennis, Twin Bridges, Shelby, Lewistown, Stanford, Chester, Livingston, Anaconda, Townsend, White Sulphur Springs, Philipsburg, Lincoln, and Deer Lodge
- Coram-West Glacier Highway Design for the Montana Department of Highways.
- Sunrise Loop Subdivision, Helena, MT.
- Nob Hill Subdivision, Helena, MT.

EDUCATION

Bachelor of Science with Honors, Civil Engineering, 1983, University of Minnesota.

AFFILIATIONS

Chi Epsilon Civil Engineering, Honorary.
Montana Airport Management Association.
American Council of Engineering Companies of Montana (ACEC-MT) - Past President.
Montana Technical Council (MTC) - Vice President.

REGISTRATION

Professional Engineer, Montana, North Dakota, Nevada.

Trisha M. Jensen

Resume

Engineering Technician/Planner

Specialties

- Traffic and Transportation Studies
- Data Collection and Analysis
- Transportation Plans
- School Safety Studies
- Environmental Document Preparation
- Environmental Permitting

Experience

A graduate of the University of Montana, Ms. Jensen's academic career focused on science and mathematics, and included course work in planning, ecology, biology, conservation, natural resources, and statistics. Since joining RPA's Traffic and Transportation Division, Ms. Jensen has been in charge of data collection and analysis for transportation plans and traffic impact studies. She has also conducted numerous traffic counts, parking studies, and pedestrian studies. She has assisted on several school safety studies at over 30 elementary and middle schools throughout Montana.

In addition to her academic coursework, Ms. Jensen has taken numerous continuing education classes. She has worked on the following transportation projects:

- Four Corners North – Final Traffic Engineering report (2008), Four Corners, MT.
- Greater Bozeman Area Transportation Plan (2007 Update), Bozeman, MT.
- Whitefish Transportation Plan/Urban Corridor Study of US 93, Whitefish, MT.
- Flathead County Transportation Study, Flathead County, MT.
- Kalispell Area Transportation Plan (2006 Update), Kalispell, MT.
- Great Falls Student Safety Study – 2004, Great Falls, MT.
- Greater Helena Area Transportation Plan Update – 2004, Helena, MT.
- Carroll College Henry Street Circulation and Parking, Helena, MT.
- McHugh Lane Traffic Study, Helena, MT.
- Walgreen's Traffic Impact Study, Great Falls, MT.
- Willow Creek Subdivision Traffic Impact Study, Kalispell, MT.
- Benton Avenue/Custer Avenue Intersection Improvements, Helena, MT.
- The Knolls at Hillcrest Traffic Impact Study, Bozeman, MT.
- The University of Montana Administration & Education Building Traffic Impact Study, Helena, MT.
- The Ameya Preserve Traffic Impact Study, Livingston, MT.

EDUCATION

Bachelor of Arts, Biological Sciences with Zoological Emphasis, 1998, University of Montana.

CONTINUING EDUCATION

Traffic Engineering Fundamentals (University of Wisconsin);
Improving Intersections for Safety and Efficiency (University of Wisconsin);
Traffic and Highway Engineering (Carroll College);
National Environmental Permitting Act (FHWA); and
Practical Project Development & Environmental Documentation (Bob Jacobsen).

Daniel M. Norderud, AICP

Resume

Environmental Studies Division Manager
Transportation Planner

Specialties

- Urban and Rural Transportation Plans
- Environmental Impact Documents

EDUCATION

Bachelor of Science, Earth Science with Geographical Planning Option, 1978, Montana State University.

AFFILIATIONS

Montana Association of Planners, American Institute of Certified Planners, American Planning Association, Institute of Transportation Engineers.

REGISTRATION

American Institute of Certified Planners

Experience

Following graduation, Mr. Norderud served a planning internship with the Gallatin County Planning Office in Bozeman. Since joining Robert Peccia and Associates (RPA) in 1978, Mr. Norderud has been extensively involved with numerous transportation-related projects for Federal, State, and local agencies.

- **Urban Transportation Plans:** Drafted portions of plans for Bozeman, Helena, and Missoula, Montana. Also collected and analyzed traffic and accident data, prepared capacity analyses, and examined signal warrants for major intersections.

- **Environmental Impact Statements (EISs):** Principal author and manager of the Columbia Heights-Hungry Horse EIS which analyzed the impacts of improving US Highway 2 in Flathead County, Montana. Mr. Norderud has prepared three other EIS documents for major street or highway reconstruction projects proposed by the Montana Department of Transportation (MDT).

- **Traffic Safety Studies:** High accident locations in Montana for MDT, as well as in Glacier National Park, Grand Teton National Park, the Natchez Trace Parkway, and the Blue Ridge Parkway for the NPS.

- **Whitefish Pedestrian/Bicycle Trails Plan (1999):** Compiled existing trails information and solicited local input to develop an overall plan for pedestrian and bicycle facilities in the community.

- **Traffic Circulation and Parking Study (1995):** Collected and analyzed parking and traffic data for the National Zoological Park in Washington, D.C. Mr. Norderud assisted RPA's engineers in the development of recommendations to address identified traffic and parking problems.

- **Environmental Documents and Construction Permits:** Currently serving as Project Manager for a fifth consecutive two-year term contract to prepare Environmental Documents for MDT highway projects. Mr. Norderud has written and overseen the completion of more than 60 environmental documents for highway projects in Montana.

- **Montana Bicycle Safety Study:** Managed the preparation of this safety study for MDT and the 2003 Montana Legislature.

Mr. Norderud possesses a thorough understanding of transportation design, environmental document preparation, and environmental permitting requirements.

Scott P. Randall, E.I.

Traffic and Transportation
Engineering Designer/Planner

Specialties

- Traffic and Transportation Planning
- Highway Engineering Design
- Data Collection and Analysis
- GIS Integration and Analysis
- Roundabout Design

EDUCATION

Bachelor of Science, Civil Engineering with emphasis in Transportation and Structures 2007, Montana State University, Bozeman, MT.

REGISTRATION

Engineer Intern, Montana

Experience

Prior to joining Robert Peccia and Associates (RPA), Mr. Randall worked as a research assistant at the Western Transportation Institute in Bozeman while attending Montana State University (MSU). As part of his research duties, Mr. Randall analyzed traffic survey data in Grand Teton National Park and researched vehicle detection methods for rural areas.

For four summers during college, Mr. Randall worked as a seasonal cartographer and planner for the Montana Department of Transportation (MDT) performing a number of duties. This included creating maps for public and state agencies, performing road analysis for fuel tax allocations, updating the GPS road inventory for Montana, and creating an interchange inventory book.

He joined RPA's Traffic and Transportation Division in May of 2007, upon his graduation from MSU. In addition to his academic course work, Mr. Randall has taken continuing education classes on complete streets and roundabout design. He has worked on the following projects while with RPA:

- Bozeman Transportation Plan Update – 2007, City of Bozeman, MT.
- Whitefish Transportation Plan, City of Whitefish, MT.
- Whitefish Urban Corridor Study of US 93, City of Whitefish, MT.
- Comstock Traffic Impact Study, Eureka, MT.
- Stillwater 180 Traffic Impact Study, Kalispell, MT.
- Four Georgians School Parking Lot Conceptual Design, Helena, MT.

Mr. Randall is a valuable team member who is skilled in ArcGIS, TransCAD, Synrchro, SimTraffic, HCS2000, MicroStation, AutoCAD, and Microsoft Office software.

RENAISSANCE PLANNING GROUP

DAVID AUSHERMAN, ASLA
PRINCIPAL, PLANNING & DESIGN

EXPERIENCE

21 Years

EDUCATION

BA Landscape Architecture, University of Florida

MDesS Landscape Planning, Harvard University

AFFILIATIONS

American Society of Landscape Architects # 384291

SUMMARY

David Ausherman has extensive experience in large scale design, urban and regional planning and computer modeling. His experience has been in both the public and private sectors and has included a diverse range of projects at local, citywide, regional, and statewide scales. He was a leader in the development of the PLACE3S scenario planning tool used by Fregonese Associates, and is serving a senior technical role in refinining and advancing CorPlan, the scenario planning model developed by Renaissance Planning Group.

Mr. Ausherman began his career with the Portland Metro, the regional planning commission in Portland, Oregon, where he played a key role in the scenario planning process that resulted in Region 2040, a 50-year plan that integrates land use, transportation and open space planning for Oregon's most populous region. The process included numerous individual studies addressing agricultural land, pedestrian mobility, criteria for expansion of the Urban Growth Boundary and access to open space. The graphic depiction of the preferred alternative is on permanent display at the Oregon Historical Society.

After joining Fregonese Calthorpe Associates, he was the key staff in developing scenarios, conducting complex analyses, and developing recommendations for signature projects such as Envision Utah, Chicago Metropolis 2020, Envision Central Texas, and COMPASS, the Blueprint for the Southern California Association of Governments. He developed methodologies for allocating growth, converting GIS data to transportation tables, and conducted subsequent analysis of indicators

Mr. Ausherman has also played a central role in a wide variety of studies involving urban design and graphic representation of scenarios for issues ranging from growth boundaries and freight movement to pedestrian plans, parking strateiges and urban housing and redevelopment. He completed his master's degree in Design Studies from Harvard University and his undergraduate degree in Landscape Architecture from the University of Florida.

REGIONAL PLANNING

Region 2040, Portland Metropolitan Region, Portland, Oregon

Senior Planner for Metro in developing a regional vision for a 50-year horizon in the 3-county, 24 municipality region. The process included numerous individual studies addressing agricultural land, pedestrian mobility, criteria for expansion of the Urban Growth Boundary and access to open space. The graphic depiction of the preferred alternative is on permanent display at the Oregon Historical Society.

Envision Utah

Senior Associate with Fregonese Calthorpe Associates in the development and modeling of three alternative patterns of growth for the Wasatch Front. Developed the methodology for allocation, conversion to transportation tables and subsequent analysis of indicators. Recipient of the Daniel Burnham Award, 2002.

Envision Central Texas, Austin Region

Scenario planning and analysis of the 5-county Austin Texas region. Interpretation and development of 3 regional scenarios for comparative modeling. Final technical and graphic development of the Preferred Scenario.

Communities in Motion, Boise, Idaho

Scenario development, analysis and emerging Preferred Plan for this 2-county, fast growing Idaho region. Innovations included a detailed transportation workshop using strips calibrated to the projected transportation budget. This allowed participants to spend the budget on a range of transportation elements, including boulevards and rail, and make choices on areas to serve and the facilities to be provided.

RENAISSANCE PLANNING GROUP

VLAD GAVRILOVIC AICP
PRINCIPAL DESIGNER

EXPERIENCE:

22 Years

EDUCATION:

Master of Urban and Environmental Planning, University of Virginia

Bachelor of Architecture, University of Illinois

Architectural Studies, University of Illinois/Unite Pedagogique No. 3, Versailles, France

AFFILIATIONS:

University of Virginia, Department of Planning, Adjunct Faculty, Instructor in Environmental Planning and Design, 2000-03

George Washington University, CCEW Division of Landscape Design, Instructor in Design Theory, 1992-95

American Federation of Garden Clubs Certification Program, Instructor in Urban Design History

SUMMARY

Vlad Gavrilovic, AICP is a planning principal and senior designer for Renaissance Planning Group, specializing in urban design and transportation and community planning. Trained in urban planning and architecture, he has more than 20 years of experience in land and community planning, transportation corridor and network design, site design, environmental resource assessment, and the development of urban and rural design standards.

His work has included projects for a wide variety of local and regional governments and agencies, as well as The Nature Conservancy, The Colonial Williamsburg Foundation, the Virginia State Parks Division, and the Smithsonian Institution. He has served on the AIA Committee of the Environment and has taught Design Theory and Environmental Design at George Washington University and The University of Virginia. He has specialized in the development of urban design, community planning and environmental protection strategies within a transportation planning context, addressing the challenges of models and prototypes for sustainable design, community placemaking, and environmental protection.

Prior to joining Renaissance Planning Group in 2006 Mr. Gavrilovic was principal and founder of Paradigm Design for 13 years, an award-wining firm specializing in sustainable land planning and design. The firm served dozens of local governments and non-profit organizations in counties and towns in the Mid Atlantic region. Prior to this, he was a project manager at Sasaki Associates, Inc., an international planning and landscape architectural firm.

COMPREHENSIVE AND MASTER PLANNING

Dragon Run Land Use Policy Audit, Middle Peninsula of Virginia

As a consultant to the Middle Peninsula Planning District Commission, Mr. Gavrilovic provided an assessment of the current land use policies and zoning regulations for the four counties that encompass the Dragon Run watershed and conducted a series of work sessions with an Advisory Group to develop a series of recommendations for policy improvements and implementation strategies within the watershed.

Loudoun County, Virginia Comprehensive Plan, Transportation Element

Mr. Gavrilovic managed the preparation of a white paper on travel management through land use and community design improvements as part of a transportation plan for one of the fastest growing counties in the United States. In addition, he facilitated a series of workshops with County staff on applying potential travel demand solutions to Loudoun County.

Toano Community Character Area Study, James City County, Virginia

Mr. Gavrilovic was part of a team of Renaissance Planning Group designers to develop a design guidelines manual and streetscape plan for the small historic community of Toano in the rapidly growing suburbs of Williamsburg, Virginia. Through a series of public workshops and committee meetings, the team developed a community profile, planning principles, and a final document ready to incorporate into the County's comprehensive plan.

Rural Residential Development Study, James City County, VA

For this historic county surrounding Williamsburg, VA, Mr. Gavrilovic led the development of a study to promote clustering and open space preservation in designated rural areas.

RENAISSANCE PLANNING GROUP

SUMMARY

Hannah Twaddell has more than 20 years of experience in regional and local planning, with an emphasis on transportation, land use, community design, and public participation. She served for 14 years as chief staff for the Thomas Jefferson Planning District Commission and the Charlottesville-Albemarle Metropolitan Planning Organization in Virginia. Her public sector career culminated in 2001 with a groundbreaking scenario planning initiative, funded by the FHWA TCSP program, that resulted in a 50-year vision for the region. As part of that project, she helped create CorPlan, the GIS-based scenario planning model that has been used subsequently by Renaissance for plans and visioning projects throughout the country.

Ms. Twaddell's recent and current work includes an award-winning regional visioning process for Greater Binghamton, New York; visioning and scenario planning projects for Waco, TX and Westmoreland County, PA; a corridor plan for economic revitalization and transportation investments along the Monongahelia River in Pittsburgh, PA; "smart growth" corridor studies for Edison Township and Warren County, NJ; a national study of best practices in rural land use and transportation planning for the National Academies Transportation Research Board; and a three-day, nationally distributed course on integrating land use and transportation planning for the US Department of Transportation.

HANNAH TWADDELL

EXPERIENCE

20 Years

EDUCATION

BA in English & Music History, Oberlin College;

Master of Arts in Teaching, University of Pittsburgh

Advanced coursework in Technology of Participation Facilitation Method; Environmental Justice and Public Involvement; MINUTP Traffic Modeling; Congestion Management Systems; Major Investment Studies; Land Use & Transportation Planning

AFFILIATIONS

Association of Metropolitan Planning Organizations

American Planning Assoc. (Past Editor, VAPA Newsletter)

Transportation Planning Columnist, Planning Commissioners' Journal

RESEARCH AND TRAINING

Best Practices Guide for Rural Transportation And Land Use Planning: NCHRP Study 08-52

Ms. Twaddell managed this ground breaking study for the National Cooperative Highway Research Program of the National Academy of Science, which sought to identify and promote state-of-the-art strategies for coordinating land use and transportation in small towns and rural communities. Leading a team that included the International City/County Management Association, Ms. Twaddell conducted a national literature review, online and paper-based surveys, focus groups, and case study interviews with rural planners and officials across the United States to explore issues and opportunities unique to rural interests. The resulting a best practices guidebook provides a foundation for an ongoing source to encourage more information and dialogue on this little-known topic.

Best Practices Manual for Community Visioning In Florida

Ms. Twaddell drafted this innovative guidebook for the Florida Department of Community Affairs (DCA). The manual, and associated training materials, is designed to assist local government planners in Florida implement new state

planning regulations that call for comprehensive plans to use community visioning processes. Ms. Twaddell led a team of Renaissance Planning Group staff to complete a national scan of visioning literature, conduct focus groups of local planners across the state, and develop case studies that highlight best practices and lessons learned by Florida communities.

Transportation and Land Use Training Course, National Highway Institute and National Transit Institute

Ms. Twaddell worked with a select team of consultants and academic leaders to assist the National Highway and National Transit Institutes in updating its approach and materials for a nationally distributed, three-day course for transportation planners on techniques and approaches to integrate transportation and land use planning. She provided particular guidance on the process of integrating community-based values and priorities into technical analyses and scenario planning tools. She served as one of two instructors for the pilot course in the summer of 2005, which attracted more than 30 California transportation and land use planners.

Community Leadership Institute, National Capital Region Transportation Planning Board

Ms. Twaddell worked with a team of experts from to design and conduct a two-day citizen planner training program for the National Capital Region Transportation Planning Board (TPB, which serves as the Metropolitan Planning Organization for Washington, DC region, The Community Leadership Institute drew 20 local leaders from a variety of organizations recognized as forces for change in their communities, including leaders of civic groups, homeowners associations, business organizations and local citizen advisory boards.